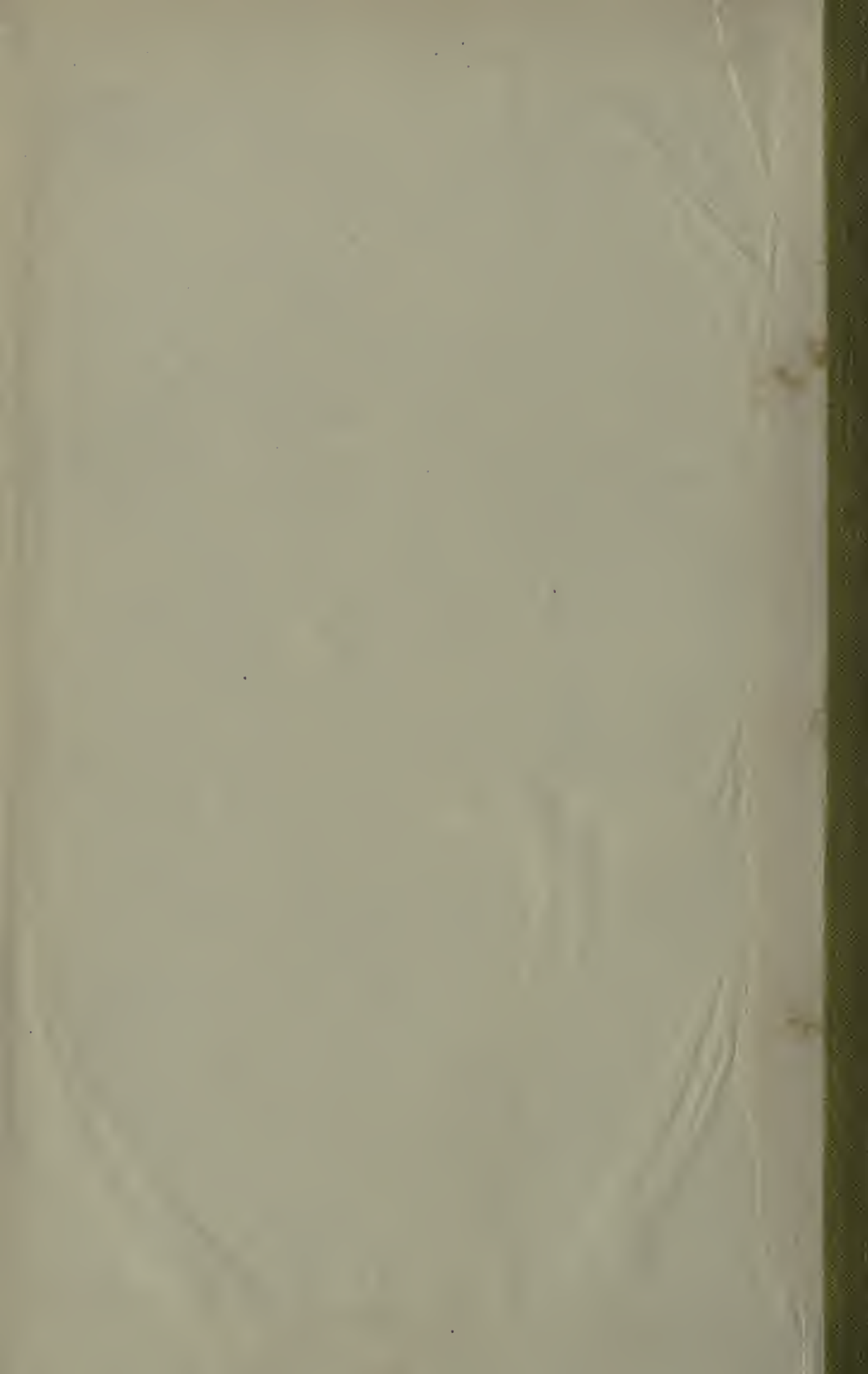


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VOL. VI

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THE BRITISH JOURNAL
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CHILDREN'S DISEASES

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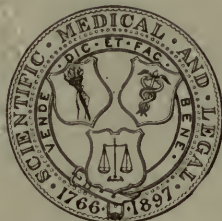
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Original Articles.

TWO CASES OF TUBERCULOUS APPENDICITIS.

By JOHN ALLAN, M.D.Edin.

CASES of tuberculous appendicitis are fortunately rare, because the prognosis, according to most authorities, is unfavourable. Lockwood's* statistics, founded upon histological examination, show that it is met with in 2 per cent. of all cases. Fitz† gives a proportion of 8 in 257 diseased appendices or 3·11 per cent. In a series of 80 cases of appendicitis seen and treated during life, I have met with the two cases to be described below. Tuberculous appendicitis constitutes a distinct variety of appendicitis, and it differs conspicuously as regards symptoms, prognosis and treatment from some of the other cases of so-called chronic appendicitis. It is possible that some of the cases described under the term "chronic appendicitis" are tuberculous in nature. It is difficult, however, to make a positive diagnosis until one sees the condition of the appendix at the operation or post mortem.

That the appendix alone may be the seat of tuberculous mischief is probable, and it is also probable that associated with tuberculous peritonitis tuberculous appendicitis may occur, because in making

* Lockwood, 'Appendicitis: its Pathology and Surgery,' 2nd edition.

† Quoted by Battle and Corner, 'Surgery of the Diseases of the Vermiform Appendix,' 1904.

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post-mortem examination on cases of tuberculous peritonitis pathologists have found in a few cases the appendices chronically inflamed and much thickened (with caseating nodules on the peritoneal surface), and evidently the seat of tuberculous mischief. It is difficult to say which is the primary condition, but most likely it is sometimes the one, and sometimes the other.

Before going any further it may be well to describe the two cases.

The first case was that of H. W—, a boy, aged 11 years, who was first seen in May, 1906. He had suffered from vague abdominal pain for some time, with an occasional more acute seizure in the right iliac region. He had been steadily losing weight for months, sweated profusely at night and suffered from a dry, hard cough. About this time he had an acute exacerbation of the symptoms, which pointed definitely to mischief in the appendix. He suffered from pain in the right lower abdomen, there was tenderness on pressure over that area and palpation was resisted. There was a definite tumour in this region, the pulse-rate was 110 per minute, and the temperature 101.2°F . The bowels were constipated. This attack subsided under careful medical treatment, but there remained a hardness in the right iliac fossa and the abdomen was distended and dull. The white cells were estimated at 5000 per c.mm. As mentioned above, he had a dry, hard cough, but had no expectoration. There was a family history of pulmonary tuberculosis. Repeated examination of the chest failed to detect any signs of pulmonary affection in the case under consideration. After the acute symptoms had subsided an operation was undertaken and the appendix removed. This was a matter of some little difficulty, owing to the many adhesions that had formed at and around the appendix. The appendix was chronically inflamed and much thickened, and there was some caseating material on its peritoneal surface. It was not examined histologically. There was also tuberculous peritonitis with fluid in the abdominal cavity. After the operation the patient markedly improved. He put on weight, the abdominal distension disappeared, the fluid became absorbed and he was much more active than formerly. I saw the patient more than two years after his operation and I found that the improvement which had taken place immediately after the operation had been maintained. He was a stout, active boy and his general health was good.

The second case was that of H. T—, a youth, aged 17 years. The history obtained was most indefinite. The patient complained of

chronic pain (not very severe) over his appendix region, but it was never of such severity as to make him lie up, although it was liable to inconvenience him when at work. There had been gradual loss of weight, lassitude, anorexia, etc. The bowels were constipated. There was little to be made out on physical examination. There was a want of elasticity and "doughy" feel about the abdominal wall, and in the right iliac fossa an indefinite fulness could be made out, but this could hardly be called a tumour. The temperature was not raised, and the pulse was 92 per minute, rather faster than normal. A leucocyte count only showed 4500 leucocytes per c.mm. There was no family history of tuberculosis. At the operation an elongated, thickened, and nodular appendix was found: and there were several enlarged mesenteric glands in the neighbourhood. The appendix and enlarged glands were excised. The latter were caseating in their centres, but there was no caseation in the appendicular nodules. No histological examination was made. As in the preceding case marked improvement in general health followed the operation. Before his discharge from hospital (about six weeks after the operation) he had gained over a stone in weight, and when seen four months after the operation there had been a further gain in weight of a stone and a half. The operation benefitted him both physically and mentally, for before the operation he had become very depressed about his progressive failing health.

In tuberculous appendicitis the attack is, as a rule, characterised by extreme chronicity, although in some there may be occasional acute exacerbations. But underlying all there is the chronic, slow, but progressive changes in the appendix. There is invariably thickening over the appendix region, and this hard, indurated mass is often very great indeed. The clinical picture presented is much the same as in ordinary appendicitis, with the exception that the symptoms are not, as a rule, of such an acute character. This obtains even in acute exacerbations. Constitutional symptoms, such as sweating, loss of weight, etc., are practically always met with. There is no leucocytosis as a rule. Bloodgood* has stated that in chronic cases without active formation of pus the leucocytes are generally subnormal. I have not found this so in ordinary chronic (non-tuberculous) cases: in these I always obtained a leucocyte count above normal (taking 6000 as normal), though never very high. In the two cases described above the number of white cells was below normal. Of course, this may have been mere coincidence, but if it be true that in tuberculous cases the leucocytosis is subnormal, then one would have a

* Quoted by Ewing, 'Clinical Pathology of the Blood,' 1904.

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valuable guide for diagnosing the variety of appendicitis, and once the diagnosis is established, in giving a prognosis and advising treatment. There may be considerable anæmia with general wasting and debility. The behaviour of the temperature is very variable. In some it follows a course typical of tuberculosis: the temperature is swinging in character and each night it rises 2° or 3° F., to fall next morning to normal. This often lasts for weeks or months. In others, however, the temperature is not raised during the course of the disease, except when acute exacerbations supervene. In many cases there is a persistently rapid pulse. In the two cases described the pulse-rate was increased, and this is of special interest in the second case, where there was nothing of an acute character to cause the increased rate. Before operation the pulse-rate of H. T.—averaged 92 per minute, while after operation the pulse varied from 72 to 76 a minute. Many consider this persistently rapid pulse a sign of grave import and commonly met with in the tuberculous.

Mr. Lockwood* maintains that tuberculous appendicitis should only be diagnosed after histological examination, as the naked eye is quite unreliable for the recognition of tubercle. While this may be necessary in some obscure cases I cannot see that it is required in other perfectly straightforward cases. If one meets with a case where there is a history of chronic appendicular pain, where there is to be felt in the right iliac region an indurated mass, where there are constitutional symptoms such as sweating, debility, loss of weight, etc., and where at the operation is found a chronically inflamed and thickened appendix with caseation on its peritoneal surface or with caseating mesenteric glands in the neighbourhood, then surely the diagnosis of tuberculous appendicitis is quite justifiable. To diagnose tuberculous appendicitis without seeing the appendix is difficult, and such a diagnosis is purely hypothetical. Still, the association of chronic attack, indurated mass over appendix, and constitutional symptoms is very suggestive, and a provisional diagnosis of tuberculous appendicitis based on such data will, in the majority of cases, be confirmed at the operation.

With regard to treatment, there seems to be a pretty general consensus of opinion that surgical measures are the best, and that the appendix should be removed wherever possible. Medical means are rarely satisfactory. It is doubtless true that by careful medical treatment the patient may be kept in comparative comfort, but every now and again there is some return of the acuter symptoms, and sometimes the patient appears to be going rapidly downhill.

* *Vide supra.*

Probably in this variety of appendicitis there is not the same risk of perforation, gangrene, etc., as in the ordinary acute appendicitis, although Mr. Lockwood* has placed on record a case where there was empyema and impending perforation of the appendix in a patient suffering from tuberculous appendicitis.

Medical treatment resolves itself into the general treatment of tuberculosis. The patient should, if possible, be treated in the open air, should have a liberal, easily digested diet, and should be given tonics such as iron and arsenic, and also malt and cod-liver oil. Locally many applications have been tried, but probably the best are some of the mercurial preparations, such as "blue ointment" or 5 per cent. solution oleate of mercury. In some cases inunction with ol. morrhue may do good. In tuberculous peritonitis in infants and young children mercurial inunction occasionally appears to exercise a beneficial effect.

Surgical treatment would seem to offer the most reliable means of dealing with this disease. The ideal course is to remove the appendix, and where the mischief is distinctly localised one might reasonably hope for permanent benefit after such a procedure. It often happens that the appendix is so bound down by adhesions that to attempt an appendicectomy would entail such a prolonged operation that it is impossible and would be dangerous. It would be interesting to know what would be the effect of doing a simple laparotomy and washing out the cavity with normal saline solution. For many years I was extremely sceptical about the beneficial results of laparotomy in cases of tuberculous peritonitis, but the marked improvement which followed laparotomy in several such cases which have come under my notice has caused me to modify my opinion. The following case which I saw three years ago made a deep impression on me. A. B—, a boy, aged 8 years, was admitted to hospital on account of tuberculous peritonitis. The case was a typical one and there was a history of chronic ill-health, lassitude and loss of flesh. The abdomen had been gradually increasing in size, and on admission it was much distended and there was abundant evidence of fluid within the peritoneal cavity. A laparotomy was performed, and the intestines were found to be all matted together and the peritoneum was simply riddled with tubercle. Nothing further was done, and the wound was closed. The boy was treated in the open air, and general measures of treating tuberculosis were enforced. Practically no improvement took place, and three weeks after the operation, at the express wish

* *Vide supra.*

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of his parents, the lad was allowed to be taken home. A bad prognosis was given to the parents. Five months after the operation the people were removing from the district, and the mother brought the boy up to the hospital to be seen. It was almost impossible to imagine that the child was the same boy. He was robust and active and had gained very considerably in weight. The mother informed me that he was able to romp and play with other boys—a pleasure he had not been able to indulge in for over a year prior to the operation. On examining the abdomen it was found to be almost as elastic and doughy as in the normal child. Not the slightest evidence of fluid in the abdomen could be detected.

Arguing from such cases of tuberculous peritonitis, one is inclined to ask if tuberculous appendicitis could not be treated on similar lines. Of course, such treatment would only apply to cases of tuberculous appendicitis, where, for the reasons given above, dissecting out the appendix is impossible or inadvisable. The risk attending a simple laparotomy is nowadays so infinitesimal that one can confidently advise such a procedure, and in my opinion such a modified operation would in some instances hold out a better prospect of relief, or even cure, than all the medical means at our disposal.

With regard to prognosis the general opinion is that the prognosis is unfavourable in tuberculous appendicitis. Mr. Lockwood, in his book already referred to, relates several instances in which death occurred from tuberculosis of other parts, though the appendix had been removed. If one were lucky enough to get cases in which tubercle primarily attacked the appendices, and in which no secondary infection had taken place, then removal of the appendix might offer a fairly certain hope of cure. Tuberculosis of the appendix as a secondary affection has a much worse prognosis, and similarly, in tuberculous appendicitis associated with tuberculosis in other parts, no matter where the tubercle originated, the prognosis is unfavourable. In cases with associated tuberculous peritonitis one might reasonably suppose that, all things being equal, appendicectomy would be more likely to be followed by cure in cases in which the appendix was primarily affected and the peritoneum secondarily, than those in which the primary source of infection was peritoneal and the appendix was subsequently affected. In cases associated with advanced pulmonary tuberculosis it is very questionable if removal of the appendix should be advised; but in *early* pulmonary lesions there is reason to believe that removal of the

appendix may not only effect a local cure, but also beneficially influence the lung condition. Everything seems to point to the hopelessness of medical treatment, which fails to check the spread of the disease, and which appears powerless to effect a cure.

In conclusion, I am not going to draw any definite deductions from the two cases given above. I shall merely say that good health two and a half years after operation (as in the case of H. W—) is very satisfactory and indicative of permanent relief; and, moreover, the physical and mental improvement of H. T— was so marked as to justify the measures taken. I have merely touched on a few of the points in connection with this disease, on such points as have appealed to me. The subject is one of great interest, and requires further investigation for its elucidation.

THE RELATION OF DENTAL DISORDERS TO TUBERCULAR DISEASE.

By FRANK MORLEY, M.R.C.S., L.R.C.P., L.D.S.,

Assistant Dental Surgeon, St. George's Hospital; Dental Surgeon to Queen Charlotte's Hospital.

THE enormous importance of the state of the mouth in the treatment of general diseases, and still more in the prevention of those diseases in children, is perhaps even now not fully appreciated by the majority of medical men. It is true that there are some children who are the picture of health and whose mouths are still in a most unhealthy condition. They are swallowing pus and micro-organisms all day long, and yet their resisting powers are so extraordinary that they remain in good health. But these are the lucky few, and they are running risks that they should not be allowed to run. The majority of children with bad teeth and unhealthy mouths are usually of pale and sallow complexion, are peculiarly liable to colds, chills and sore throats, their whole vitality is lowered, and they are prone to be attacked by any epidemic that is about. And, that a septic mouth is a predisposing cause of such a disease as tubercle is a fact that is forcibly brought home to those who have much to do with children's mouths, and which is all too commonly forgotten by those who have the health of children in their care.

It is generally known and accepted that mouth-breathing is a contributory cause of phthisis. Every dental surgeon knows that

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the habit of mouth-breathing is often due to dental causes, and that adenoids do not account for every case. The child has an exposed nerve in a temporary molar and gets in the way of masticating insufficiently so as not to bring pressure on that tooth; or the gums are tender, and when the mouth is kept open the painful contact of the teeth of the two jaws is prevented. Thus the habit of keeping the lips apart and breathing through the aperture is acquired. This is quite apart from the danger of enlargement of the tonsils due to septic infection from the mouth. Thus a double channel for tubercular infection is opened up.

Enlargement of glands in the neck is far more common than the enlargement of glands elsewhere in the body. The more usual causes of bad teeth—ear disease, pediculi, inflamed tonsils—easily account for this condition of things; but the fact that tubercle should so frequently attack the cervical glands is perhaps not so easy of explanation, unless it be that the glandular enlargement is at first simply inflammatory and later becomes infected with tubercle. Then the question arises as to how the bacillus gains access to the gland, and here again the great importance of the condition of the teeth comes into prominence. It may not be that most tubercular cervical glands are infected through the teeth or gums, but that they may be, and often are, has been proved beyond doubt. Cornet injected tubercle bacilli into a decayed tooth and got as a consequence a tubercular enlargement of the nearest cervical gland. Starck has found the bacillus in a carious tooth, in the pericementum about its roots, and in the enlarged glands in connection with the tooth, so there can be little doubt of the possibility of infection through this channel. There are no lymphatic vessels in the pulp of a tooth, and to this must be attributed the fact that tubercular glands in the neck are not even more common than they are. The bacillus has to penetrate the apex and affect the periodontal membrane before it gains access to the lymphatic system. Again, if bad teeth and roots exist in a mouth a chronic lymphadenitis is very likely to be set up. The child has a bad taste in the mouth, anorexia and insufficient nourishment and a general lowered vitality, so that the chronic lymphadenitis is particularly inclined to lead to a tubercular infection of the gland, and possibly from that to a general tuberculosis. The moral is easy to see. Children's mouths should be regularly inspected and any caries promptly treated. If this cannot be efficiently done the tooth should be removed. In no case should a septic root be allowed to remain in a child's mouth, even if painless. If a gland enlarges, the cause should be found

and removed as soon as possible. If no cause can be found and the gland does not rapidly yield to treatment it should be removed by surgical means. If left, it may become tubercular and lead to pulmonary infection. Dentists have become too conservative in their attempts to save carious temporary teeth, and perhaps run a risk of tuberculous infection. A pretty jaw is much to be desired, but if it is to surmount a much scarred neck perhaps it would be better to have sacrificed the appearance of the jaw and avoided the enlarged glands breaking down and causing sinuses, besides the grave danger of a general infection. In hospital practice temporary teeth have often to be sacrificed that could possibly be saved if more time were available. In these cases where temporary teeth are lost, care must be taken that the child is properly nourished and fed, and express directions given to the parents as to diet. If the child is to be treated to the best advantage, more frequent consultations should take place between doctor and dentist.

With regard to the treatment of pulmonary tuberculosis, the dental aspect of the question is not sufficiently brought before the minds of general practitioners. Good work in this respect has been done by Mr. F. Lawson Dodd, whose paper before the Odontological Society in June, 1906, is worthy of serious perusal. In this paper he laid great stress on the proper nourishment of the tissues both in the prevention and treatment of phthisis. With the former I have just dealt; as regards treatment it is perhaps only necessary to point out that part of it consists in giving the patient large quantities of food. If that food is swallowed whole it is not properly digested and does little good. If the patient is treated without the mouth being first put into good order, not only is there no appetite for food, but it is swallowed in large lumps. Painful teeth and tender gums are naturally avoided, and one of the great means of treatment is lost, viz. that of increased nourishment. In addition to this, the food is swallowed in company with the bacterial products of the septic condition of the oral cavity, which alone must tend to decrease its nutritive value, if not to more serious effects, as pointed out by Dr. Hunter. If a consumptive child has lost its power of proper mastication it is much more difficult to treat that child properly. The modern treatment of consumption aims at getting the patient into a germ-free air. He is removed to a high altitude, his surroundings are kept scrupulously clean; we even see that the rooms he inhabits have rounded corners so that no dust or germs can find a resting place. Well and good; but what is the use of all that if you leave a perfect breeding-place for all sorts of

organisms in his mouth? Moisture is present in a suitable temperature, and everything conducive to the comfort of the bacillus, including carious teeth, septic roots, and swollen and inflamed gums. Another point is that sanatoria are usually far removed from the dental world, so once there, dental treatment is unlikely, unless in the case of severe pain. Unless all patients can have their mouths put in good order before they are sent to sanatoria, then each sanatorium should possess a dental surgeon, and his post would be no sinecure. From all points of view more dental treatment would do much, not only to prevent children acquiring tubercular disease, but also to aid in their treatment. The more forcibly this can be impressed on the minds of those who have delicate or tubercular children under their medical care, the better for their patients and themselves.

A CASE OF ACUTE LYMPHATIC LEUKÆMIA.*

By CLAUDE JOHNSON, M.B., CH.B.,

Resident Medical Officer, The General Hospital, Birmingham.

THE patient, a boy, aged 2 years, was brought to the General Hospital, Birmingham, on October the 26th, 1908, and was admitted under the care of Dr. Stanley Barnes, to whom I am indebted for kind permission to publish the case.

The patient was a well-developed boy, and had had no serious illness. The present illness began about one month before admission to the hospital, and the first sign of disease that was noticed was a swelling in the left side of the neck. As he was treated at the Queen's Hospital at that time we may presume that there was no general glandular enlargement one month before the patient's death, so that the disease was very acute in its course.

On admission to the hospital there was found to be a large tumour in the region of the left parotid gland. The lymphatic glands of the neck and in the axillæ and groins were markedly enlarged, discrete, and hard to the touch. The skin showed many petechial hæmorrhages. There was also bleeding from the gums.

On examination of the thorax there was a large area of dulness extending from the supra-sternal notch down the sternum to the level of the fourth costal cartilages, and reaching for a short dis-

* Specimens shown at the Birmingham University Medical Society on November the 11th, 1908.

tance each side of the sternum. This was considered to be due to enlarged mediastinal glands, or to a large thymus. On examination of the abdomen the flanks were noticed to be bulging. The spleen was large and extended about two inches below the left costal margin. It was firm, moved on respiration, and its anterior edge felt very sharp. The liver was considerably enlarged. A tumour could be felt in each flank, which subsequently was shown to be an enlargement of the kidney. The child appeared very pale; there was a large quantity of blood passed *per rectum*, and also a little was coughed up. The urine was found to contain blood. The blood-count showed that there were 1,200,000 red cells, and 517,000 leucocytes per c.mm. The leucocytes consisted chiefly of large lymphocytes; there were relatively few polymorphonuclear cells, and no myelocytes were present. There was a marked degree of poikilocytosis, and many of the red cells were nucleated. The patient gradually became worse after admission, and died suddenly on October the 31st.

At the post-mortem examination a great increase was found in the lymphoid tissue all over the body. An enormous glandular mass hung down in front of the pericardium. The thymus was very large. There was a slight excess of turbid fluid in the pericardial sac, and numerous petechial hæmorrhages were present under the pericardium. The heart-muscle was pale and soft, and the valves appeared normal. The lungs showed slight broncho-pneumonia. The bronchial and mediastinal glands were greatly enlarged. There was considerable enlargement of the mesenteric glands, which were very pale and showed no caseation. The mucous membrane of the intestines was pale, and there was slight enlargement of Peyer's patches. The liver weighed 21 oz., and was large and pale; the pancreas appeared normal. The kidneys, which were enormously enlarged and weighed 9 oz. each, appeared very pale with prominent *venæ stellatæ*. On section there was marked enlargement of the cortex with extreme pallor. Numerous areas of hæmorrhages were scattered throughout the cortex. The supra-renal glands were normal. The spleen, which weighed 4 oz., was enlarged, firm and pale, being uniformly coloured. The brain appeared normal. Both middle ears contained a considerable amount of glairy fluid. The bone-marrow of the shaft of the femur was pale in colour and creamy in consistence.

Microscopical examination.—All the lymphatic glands showed enormous hypertrophy of lymphocyte-forming tissue. In the kidneys the tubules and Malpighian tufts were widely separated by an infil-

tration of lymphocyte-like cells, contained in a fine reticulum of young fibrous tissue. Numerous hæmorrhages were to be seen scattered throughout the cortex and medulla. Soudan III preparations showed a small amount of fatty change in the cells of the convoluted tubules. In the lungs there was a slight amount of catarrhal pneumonia. Masses of cocci were here and there present in the alveoli. In the spleen no distinct boundary was seen between the Malpighian bodies and the pulp. The latter was infiltrated with lymphocytes. There were also numerous small hæmorrhages. The liver showed no abnormal changes. In the bone-marrow films there was a large number of lymphocytes with numerous red cells, both nucleated and non-nucleated forms being present.

A CASE OF HYDRONEPHROSIS.*

By GEORGE CARPENTER, M.D.

THE child, a boy, aged $2\frac{1}{2}$ years, was admitted into the Evelina

FIG. 1.



Hospital for Sick Children on January the 25th, 1889, with pertussis and double broncho-pneumonia, and died the same day.

The left kidney was mottled all over, pale and violet on its surface and on section (*vide* Figs. 1 and 2).

* Exhibited before The Society for the Study of Disease in Children, on March the 20th, 1908.

FIG. 2.



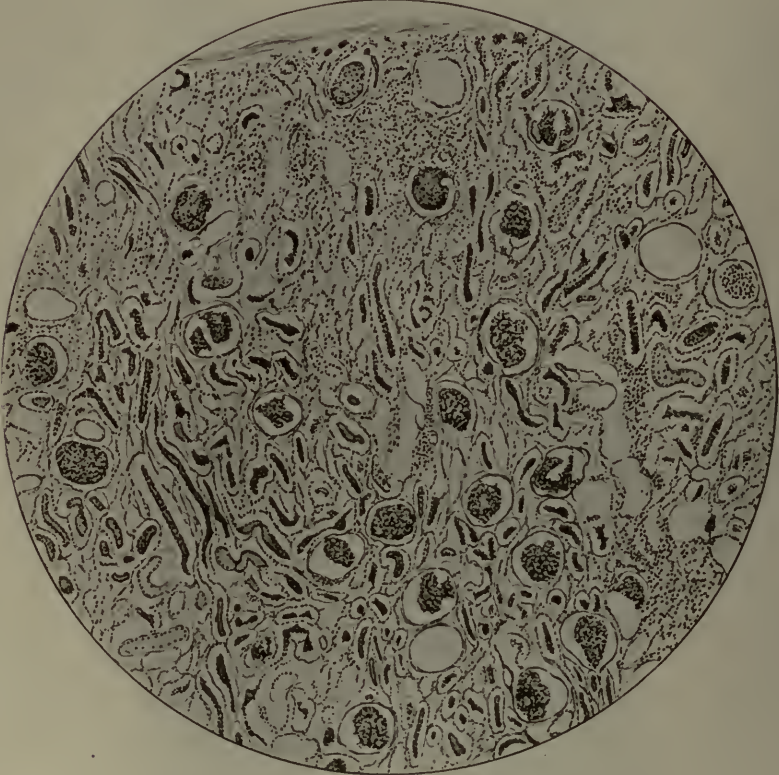
FIG. 3.



The left ureter was much dilated (*vide* Fig. 3) the constriction being close to its junction with the bladder.

The pelvis and calices were dilated (Fig. 1). The papillæ were natural. The mucous membrane was intact.

FIG. 4.



Sections of the kidney showed patches of round-celled infiltrations and unevenly distributed fibrosis, with compression and destruction of the renal parenchyma (Fig. 4). There were signs of dilatation in some of the cortical convoluted tubules.

TWO CASES OF TETANUS NEONATORUM.*

By GEORGE CARPENTER, M.D.

CASE 1.—Baby R—, aged 1 week, son of an upholsterer, was admitted into the Queen's Hospital for Children on November the 3rd, 1907. It was breast-fed and took well up to five days old (two days previous to admission) and the "cord separated quite well." Fuller's earth was applied. On the sixth day the mother noticed that the mouth could not be opened. "When it cried it went stiff and threw its head back." When it was admitted it was very rigid, the jaws were fixed continuously, the hands were clenched, but with the feet nothing special was observed, and it did not arch its back. "It had great difficulty in breathing, as if it were going to choke, it got blue in the face, and when it was fed nasally it became black in the face."

On examination there was a muco-purulent discharge from the right nostril and a slight discharge from the navel, which was not inflamed. The latter was examined bacteriologically and the pathologist found in the smears *Diplococcus proteus*, *staphylococcus*, but no specific organisms. The fontanelles did not bulge, but the neck was rigid and very slightly retracted. The arms were flexed, the forearms flexed on the arms, and the hands were clenched. The legs were rigid, but the toes were not involved. He was cyanosed and had inspiratory retraction. Some moist sounds were audible over the chest, being possibly conducted sounds from the nose. Both sides of the chest behind gave quite a boxy note to percussion and the laryngeal sounds were particularly well conducted over the left side. When the chest was being examined he had much hic-cough and became cyanosed. The mouth was partially open but the jaw was stiff, and when manipulation was made the child became blue, the mouth foamed and the jaw became very decidedly fixed. On these occasions the contracting masseter muscles could be felt to be strongly acting. The day previous the sister in charge of the ward said the jaw was tightly fixed all day and nothing could be got between the lips, the spasm never relaxing, whereas to-day there is decidedly less spasm, and an attempt has been made to feed him by the mouth, but unsuccessfully, as spasm is at once induced by the operation. The child while laying still was fairly comfortable, but any disturbance caused tonic spasm of the face muscles, arms, hands,

* Read before The Society for the Study of Disease in Children, on April the 10th, 1908.

legs, and trunk; the masseters were markedly affected. During these spasms the infant became extremely cyanosed and the pulse was slow and irregular. Temperature on admission 97.8° F., on the morning of the 4th 97° F., and in the evening 97.6° F., the pulse at this time being 140 to the minute and the respirations 80 to the minute. He was given bromide and chloral $\bar{a}\bar{a}$ gr. iij *quartis horis*.

On the evening of the 4th the spasms were more frequent and he was ordered 20 c.c. of anti-tetanic serum, which was injected into the subcutaneous tissue of the abdomen at 6 p.m.

He died at 7 a.m. the following day, the morning temperature being 101.4° F.

At the post-mortem examination there was found collapse of the lungs; the heart engorged on the right side; the brain congested; the tissues round the umbilicus thickened and unhealthy-looking. The other organs were normal.

CASE 2.—Baby Brown, aged 1 week, son of an upholsterer, was admitted into the Queen's Hospital for Children on April the 2nd, 1908. Nothing amiss was noticed with the child until tea-time the previous day. The mother had been attended by a Salvation Army nurse. The cord came away two days after birth; nothing was done to it, there was no discharge from it, and it was dressed with Fuller's earth. The child began to cry and it was thought to be suffering from stomach-ache. Its mouth became stiff, but prior to that it was kicking and clenching its hands. Its mouth subsequently became less stiff, and they got some milk down with a spoon, but later on in the evening it could not take the breast, and the following morning it was admitted at 6.30 a.m.

On examination.—The face is screwed up and risus sardonius is a prominent feature. The finger can just be inserted into the mouth, which is kept tightly clenched. At times the infant is quite limp and at others the body and limbs become rigid. He is more rigid in the lower extremities than in the upper. When the rigid state passes away there is some twitching. When a spasm comes on he froths at the mouth and gets blue in the face. He is unable to swallow and turns black in the face if milk is put into the mouth. The eyes are kept closed; knee-jerks not obtained; plantar reflex present, no definite Babinski. Heart, nothing abnormal detected; respirations irregular and jerky.

At 5.30 p.m. he was lumbar punctured—no fluid obtained. He was injected with 5 c.c. of anti-tetanic serum (Lister Institute) through the cannula and with 5 c.c. into the skin of the flank.

Chloral and bromide, $\bar{a}\bar{a}$ gr. iij *quartis horis* were administered by the mouth. Temperature on admission 97° F. and in the evening 101° F. Feeding by nasal tube inducing spasms he was given Slinger's meat suppositories by the bowel. At 8.50 p.m. he had another spasm, got very blue, and suddenly expired.

At the post-mortem nothing was found but cerebral congestion, which was very marked. The brain was very soft and diffuent to the touch. The right side of the heart was congested, as also the liver. Nothing else abnormal was observed.

A RETROSPECT OF OTOLOGY, 1908.

By MACLEOD YEARSLEY, F.R.C.S.,

*Senior Surgeon to the Royal Ear Hospital; Medical Inspector of
L.C.C. Deaf Schools.*

No very startling or valuable papers upon otological subjects in children have appeared during the past year, but there has been a fair number of interesting and instructive articles.

External ear.—MUMMERY (B. J. C. D., v, 71), has shown an interesting instance of supernumerary auricles, and MACLEOD YEARSLEY (B. J. C. D., v, 121), a large angioma of the pinna and meatus. MELLAND (B. J. C. D., v, 481), has published a case in which a supernumerary auricle was supposed to be due to maternal impression, but in which the impression was proved to have occurred after the time the pinna is formed. Some unusual cases of foreign bodies in the ear were recorded by GIFFORD (B. U. N. C. M., iii, 33).

Middle ear.—In a useful paper entitled "The Menace of the Swimming-Tank," COBB (B. M. S. J., July the 2nd, 1908), describes cases of acute otitis media directly caused by diving into the tank, and considers they were not due to infection by contaminated water, but to putting the head under. As I myself have, however, recently seen a case of double aural furunculosis in a boy, which was directly traceable to the swimming-bath, infection probably plays a not unimportant part. KENEFECH (A. J. O., April, 1908), divides the otitis of children into two classes, that arising within the tympanum from specific poisons in the circulation, and that caused by infectious processes from inflammation of structures in the immediate neighbourhood. He considers that when adenoids are present they should be cleared out as soon as the age and condition of the patient will allow. A similar paper on otitis in children has been written by

NEWMANN (D. M. Z., No. 31), who agrees largely with Kenefech. ELLIS (C. S. J. M., vi, 222) says nothing new in his article on acute otitis media in infancy and childhood. CABOUCHE (A. M. O., May, 1908), writing on the varieties of middle-ear infection occurring in children, pleads for early antrotomy. BURKE (C. M. J., July the 25th, 1908), published some unusual mastoid operations in children. The complications of acute and chronic suppuration have received several contributions. CORNET (J. L., iii, 568), has published details of a case of thrombo-phlebitis of the lateral sinus in a child aged 4 years, treated by opening and drainage of the sinus, without ligation of the jugular. A month of septicæmia ended in recovery. The original otitis was due to measles. Neglect of a chronic suppuration was responsible for the death of a girl aged 12 years, from cavernous sinus thrombosis, under Hanna's care (J. L., xxiii, 364). Several instances of labyrinthine surgery in children have been published in 1908. MACLEOD YEARSLEY (B. J. C. D., v, 121), has recorded a fatal case of labyrinthine suppuration in a girl aged 13 years, and a successful operation in a boy aged 8 years. FRASER (J. L., xxiii, 495), performed vestibulotomy on a boy aged 11 years with good result, and SCOTT (A. O., April, 1908), published a very instructive case of acute internal hydrocephalus secondary to streptococcal infection of the labyrinth in a boy aged 14 years. This observer, with WEST, has since advocated continuous drainage of the cranio-spinal cavity in meningitis.

Internal ear.—Apart from labyrinthine suppuration a few contributions to the literature of inherited syphilis only have been made. The aural manifestations of that disease have been dealt with by MACLEOD YEARSLEY (B. J. C. D., v, 195), and GLOVER (A. M. O., February, 1908), has reported a case of inherited syphilitic central deafness in the second generation in a boy aged 13 years. WANNER (J. L., xxiii, 430), has reported interesting results in the functional testing of these cases.

Lastly, the question of deafness in relation to *school medical inspection* has been made the subject of a long paper by MACLEOD YEARSLEY (B. J. C. D., v, 467).

REFERENCES.

- A. J. O.—'American Journal of Obstetrics.'
- A. N. O.—'Annales des Maladies de l'Oreille.'
- A. O.—'Archives of Otology.'
- B. M. S. J.—'Boston Medical and Surgical Journal.'

B. J. C. D.—'British Journal of Children's Diseases.'

B. U. N. C. M.—'Bulletin of the University of Nebraska College of Medicine.'

C. S. J. M.—'California State Journal of Medicine.'

C. M. J.—'Cleveland Medical Journal.'

D. M. Z.—'Deutsche medicinische Zeitschrift.'

J. L.—'Journal of Laryngology, Rhinology, and Otology.'

Editorial.

IN the year 1909 there arises an unusual opportunity for the BRITISH JOURNAL OF CHILDREN'S DISEASES to be of great service in promoting the study of disease in children. The opportunity arises from the fact that the children in the elementary schools of England are for the first time being systematically examined by medical officers appointed for that purpose. Such an examination ought to help greatly the welfare of the children, for by it many remedial defects should be brought to light. Thereby the parents should be educated to take more care of the health of their children, and should specially be taught to keep them clean. We notice in one medical officer's report that he comments severely upon the verminous condition of the girls; the pointing out of this to the parents can only have the effect of reducing the evil. The backward and mentally defective children will be picked out, and in consequence they will receive more detailed and personal attention than has up to the present time been given them. We shall soon receive statistics of the health of all the children in the elementary schools, prepared by the medical officers, and therefrom much useful information should be gained.

The examination of the children requires particular care, and a greater amount of knowledge on the part of the medical officers than is usually acquired by the average medical practitioner. Disease, as it manifests itself in children, needs special study, and it is hoped that the BRITISH JOURNAL OF CHILDREN'S DISEASES may help those who have undertaken the very responsible work of making the examination of the school-children of England. The examination is possible of doing a great amount of good, by making the lives of many children happier and more healthy on account of the

advice to the parents which it necessarily calls forth. The examinations must be performed by competent men, or otherwise they will be worse than useless, and even harm may be done in various ways. To give an example of the harm which may result, we noticed in another medical officer's report that in a large number of children tuberculosis of the lungs was diagnosed. We venture to point out that tuberculosis of the lungs is a very rare condition to find in children of the age of those who attend school. Phthisis in children similar to that which occurs in adults is a very rare disease. In many of these cases of tuberculosis of the lungs we feel sure that the diagnosis is wrong. These children require special care and treatment, but it may be of serious consequence to inform the parents that their children are tuberculous when no such condition is present. It requires a considerable amount of skill and practice to diagnose tuberculosis of the lungs in children, for there are many conditions which may be mistaken for it by those who have not had much opportunity to examine the chests of patients of this age.

We feel sure that this JOURNAL will be of special use in drawing attention to such points as this, and therefore we enter upon the sixth year of publication in the hope that good and useful work in promoting the knowledge of disease in children may be done in this connection.

The Royal Society of Medicine.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

Friday, December the 18th, 1908.

Dr. GEORGE CARPENTER, *Chairman of Council of the Section, Vice-President of the Royal Society of Medicine, in the Chair.*

Discussion on Whooping-Cough.

Dr. PORTER PARKINSON, in opening the discussion, pointed out that in England the death-rate per million from this disease has diminished of late years, from 527 per million in the years 1861-70, to 450 in the years 1881-90, and in 1895 to 316. It is more fatal in Scotland than in England, and less so in Ireland. The contagion must be a specific organism, several of which

have been described, but the real one appears not yet to have been isolated with any certainty. The infection is conveyed by the sputum, which is said to be most virulent during the catarrhal and early paroxysmal stages. The virus remains active after drying at least for several weeks, as has been proved by epidemics arising on board ship where no other source was probable. One half of the cases occur during the first two years of life, and it is not infrequent during the first six months, showing a stronger tendency to attack the young than any other infectious disease. He said that Holt had recorded a case of a child, aged 12 days, whose mother was suffering from the disease at the time the child was born. There is a leucocytosis, especially in the paroxysmal stage. It is easy to overlook the primary disease when bronchitis or pneumonia has supervened, as the whoop under these circumstances frequently disappears. Dr. Porter Parkinson then referred to the complications, including vesicular and interstitial emphysema, acute bronchiectasis, glottic spasm, polyneuritis, papillitis, albuminuria, post-nasal catarrh, in addition to those commonly observed. Two thirds of the deaths from whooping-cough occur during the first year of life, chiefly from lung complications. Paroxysmal coughs, which may be mistaken for whooping-cough, were mentioned. A short survey was then given of the various methods of treatment, including the diet and various drugs, and bromoform was recommended; it should, however, be dispensed in solution, 1 drop to an ounce of water with a few drops of alcohol, 1 to 6 drachms being given in a dose.

Dr. L. GUTHRIE said that in 1578 De Baillon, of Paris, described accurately an epidemic of whooping-cough which he described under the name of "la quintain" or "tussis quintana," as it was known by people as occurring in paroxysms of cough every five hours. Evidently that was the origin of the name, as quintana meant a five-hourly cough. With regard to the idea that the cough was dependent on the pressure of enlarged bronchial glands on the vagus nerve, another form of paroxysmal cough was that of influenza, the difference being that in the latter there was no vomiting as a rule, nor a whoop, and it yielded suddenly to treatment. The paroxysmal cough due to enlarged bronchial glands was largely recognised by enlargement of both sides and impairment of resonance at a second or third intercostal space near the sternum with harsh tubular breathing, and the Eustace Smith murmur on retraction of the neck. He believed the cough depending on enlarged bronchial glands only occurred in children who had already had whooping cough; it was apt to occur weeks or months after the original attack. That was important, as such children were sometimes excluded from school on the idea that they had an infectious disease. Sudden death after whooping-cough must be very rare; he had only witnessed one death after a paroxysm, namely, in a boy aged 3 years, who had been suffering from whooping-cough three weeks, who was playing in the waiting-room when he had a fit of coughing, at the end of which he became black in the face, gave a few feeble gasps and died. Artificial respiration failed to restore life. There was great distension of the right side of the heart, but nothing else to which he could ascribe death. Perhaps at the present day such a death would be ascribed to lymphatism. He thought cerebral hæmorrhage was very rare in pertussis. The only case he had seen was in a child, aged 5 years, who suddenly became aphasic and hemiplegic on the left side. The child had hereditary syphilis; her father was under him for advanced tabes some months before. He thought the hæmorrhage in the child was due to disease of the cerebral vessels; if such vessels were healthy they would not

burst. He agreed that the prognosis was generally good. As to treatment, he had tried most of the things recommended, but had not found one better than another. Bromide and belladonna were his favourites for relieving the symptoms.

Dr. WALTER CARR said the difficulties of diagnosis might arise from enlargement of the bronchial glands, influenza and bronchiectasis. In the latter case the cough closely simulated that of whooping-cough. The history helped greatly, and physical examination revealed the dilated bronchial tubes, though that did not exclude the possibility of whooping-cough as a complication. The cough just stopped short of the whoop. He proposed to deal particularly with treatment. It was difficult to determine the value of merely palliative treatment. There were many gradations in severity, and sometimes when mild it could not be diagnosed except from the epidemic prevalence of the disease. Severe cases were often complicated by bronchopneumonia. The early manifestations were no guide to the subsequent severity of the disease, a parallel case to which was that of smallpox. He laid great stress on the importance of an abundant supply of fresh pure air. An important point was as to whether the complications were due to the particular poison or infection of whooping-cough or to the fact that the micro-organism fell into bad company, the bad company being responsible for the mischief. He thought the bronchitis was due to the same causes which produced it in the ordinary way. A common cold was not caught as a rule in the open air, but in crowded and ill-ventilated rooms, and on that ground pure fresh air, at a temperature of about 60° F., he regarded as very important, care being taken to protect the child from any draught or chill. As long as the temperature was 100° F. or over, it was better to keep the patient in bed, and if there were signs of bronchitis the child should be kept in a room, or preferably two rooms, at the same temperature. He was doubtful of the efficacy of various vapours and fumes; he had tried various kinds. The bronchitis could be treated on ordinary lines, and his practice was to add bromide of potassium, though he did not know how it acted. He also had some faith in the application of a liniment; mothers often said the child was better after the use of such. He asked whether there were any specifics for diminishing the frequency or severity of the paroxysms. He had not tried bromoform, but from what he had heard he was prepared to do so. He had been afraid of over-drugging, with the consequent upsetting of the intestinal canal. Belladonna had an established reputation, and in the later stages he thought it diminished the frequency and perhaps the duration of the attacks. A complication which was often troublesome was vomiting; it was particularly marked where there was digestive disturbance. Hydragryrum cum cretâ and bicarbonate of soda and rhubarb might do good, and tend to lessen the vomiting. Care should be exercised in regard to food and feeding. When a child was vomiting constantly it was well to give a little food to bring on a paroxysm, and then, after the vomiting, to give a little more food in the hope that it would be retained and give some benefit.

Dr. J. D. ROLLESTON said that from 1899 to 1907, 131,830 scarlet-fever cases were admitted to the Metropolitan Asylums Board Hospitals, and of these 756, or .5 per cent. were suffering from whooping-cough on admission. Another 855, or .6 per cent., subsequently developed whooping-cough as a complication. Of 55,557 cases of diphtheria, 340, that is, .5 per cent., were suffering from whooping-cough on admission, and another .4 per cent. developed it as a complication. As was to be expected from the difference

in the age incidence the association of whooping-cough with enteric fever is very uncommon. Only one case of 9354 cases of enteric fever had it. The association of whooping-cough with more than one other infectious disease is also very rare. He did not think that whooping-cough had any very unfavourable influence on any acute infectious disease, with which it was associated. In the case of diphtheria the incidence of laryngeal cases is apt to be higher than usual when whooping-cough is concurrent. Severe paroxysms in tracheotomy cases might necessitate sudden replacement of the tube after it had been removed, and render its stay in the trachea unduly protracted. Trousseau had remarked that the paroxysms of whooping-cough disappeared during scarlet fever, but he did not confirm this.

Dr. W. EWART regarded whooping-cough as one of the greatest calamities in the specialty, not because it was so often fatal, but because it left so much behind and spoilt so many lives, in the way of emphysema and right heart distension, and sometimes by collapse. He advocated a careful study of every phase of the disease, with the determination to grapple with the condition. Consultants were not able often to continue their treatment of cases of the disease, as they were mostly seen by general practitioners or sent to hospitals. As soon as pyrexia commenced, the doctor should be on his guard lest it might develop into whooping-cough, and if there were any harmless remedies they should be tried so as to ward off an acute attack. He advocated systematic hygiene of the upper respiratory tract, so as to inhibit the growth of whatever micro-organism was responsible for the disease. He used instillations of almond oil and olive oil into the nostrils in all infections of the respiratory tract with great benefit. If he suspected the onset of whooping-cough he placed the patient in the best conditions of resistance, fresh warmed air, if necessary damped a little. He was a strong believer in suitable drugs, and had much faith in iodide of potassium, which was also very good for pneumonia, broncho-pneumonia and bronchitis, particularly of the asthmatic type. It seemed to greatly benefit in clearing the tenacious secretion which favoured the growth of organisms. Strong poisons, if properly limited in dosage, were mostly good remedies. He also believed greatly in the inhalation of terebine, and its use in a liniment. Parolein was comfortable for the mucous membranes, and was well combined with belladonna. The stomach was benefited by castor oil and grey powder. The paroxysms of cough sometimes caused the thorax to be driven in, and the chest arrangements to be mechanically disturbed. A respiratory belt, as advocated by Kilmer, was also good. His main contention was that every symptom and every stage should be carefully and systematically studied with the determination to eventually combat the disease.

Dr. RUSSELL WELLS asked for how long a period whooping-cough was infectious? A child with the disease might go on for three months and towards the end of that time there was an occasional whoop and sickness. Was the child infectious during all that time? He doubted it, as did some French authors. With regard to the pathology, the curious spasm, the vomiting, the tendency to hæmorrhages and the long course made it a very definite disease. It would be agreed that whooping-cough was a bacillary or microbial infection, but why should that give rise to the symptom-complex? He thought the symptoms and the peculiar brassy cough were due to a derangement of some anatomical part or definite set of physiological functions, the particular part affected being different from that in an ordinary cold or coryza. He had long thought that in the whooping stage

of whooping-cough they were dealing with a post-infectious condition. A somewhat parallel case was that of diphtheria, and in post-diphtheritic paralysis no diphtheria microbe might be present. Possibly in whooping-cough there remained a nerve irritation or exaltation. Some years ago it was advocated that cocaine should be given by the mouth in fair-sized doses instead of painting the throat. He had given a dosage based on a grain three times a day for the adult. He had never seen any evil effects from it, and he did not know any drug which approached it in shortening the attack, easing the vomiting and discomfort. At some future occasion he would like to hear the experiences of any others who had tried the drug.

Dr. J. H. FRANCIS NUNN agreed with Dr. Ewart in insisting on paying careful attention to all the symptoms and phases of whooping-cough. Many of the children died from cerebral congestion due to the fits of coughing. Whooping-cough was more difficult to recognise because of the similar cough associated with influenza. His eldest boy had influenza some years ago, and had frequently had it since, and so severe were the paroxysms that he sometimes finished them on the ground. Twice whilst he was at Epsom College the medical officer there stated his belief that the influenzal cough was whooping-cough. After a child had had whooping-cough, the cough of any cold afterwards caught was apt to have a spasmodic character. He agreed as to the importance of fresh air, but reminded members of the old-fashioned method, which was said to be efficacious, of sending patients to gas works to inhale the vapour.

Dr. MILNER BURGESS pointed out that only two papers on whooping-cough were included in the 'Reports of The Society for the Study of Disease in Children.' Very little had been added to the subject during the last eight years. In an experience of thirty years he only remembered one case of meningeal hæmorrhage, and he asked why it was so infrequent. The great points to guard against were the violence of the cough, the vomiting, and the epistaxis. He had only seen death occur in one case. He had used hydrargyrum cum cretâ, bromide, syrup of chloral hydrate, and the liquid extract of cresolin. He laid stress on very careful dieting with liquid food in small quantities, given immediately after a paroxysm.

Dr. BIERNACKI said that the treatment of the paroxysm had been very fully discussed, and little room remained for comment. He would like, however, to mention Naegel's method of dealing with the paroxysm when so severe as to endanger life at the moment, namely, by pulling the jaw downwards and forwards; in some cases immediate relief resulted. Mild paroxysms might be associated with fatal broncho-pneumonia. This was especially true of neglected children among the poor, who lived in dirty surroundings, and were allowed out of doors too soon, and in unsuitable weather. Careless parents required more supervision than was possible at present, and doubtless the day would come when whooping-cough would be made a notifiable disease.

Dr. LEOPOLD GOFFE said he had treated cases of whooping-cough during the last five or six years, and had used cocaine as an integral part of the treatment. He had not administered it by the mouth, but painted it on the external auditory meatus, and on the membrana tympani. The formula recommended was: "Cocaine, hydrochlor., 23 gr.; liquor hydrarg. perchlor. 20 m, glycerine, 4 dr.; water, 4 dr."

Dr. E. I. SPRIGGS referred to a point raised by Dr. Burgess, who had asked why meningeal hæmorrhage was not commoner. The arteries were so strong that they would stand a sudden rise of blood-pressure without

breaking, particularly in youth, owing to their great elasticity. In a research published in the 'American Journal of Physiology,' the blood-pressure was recorded during muscular exertion, and a demonstration was given of the sudden rise of blood-pressure which was sustained by the vessels in severe exertion.

Dr. BERNARD BAILEY said, with regard to infection, that when he was house-physician to the Children's Hospital, Shadwell, children were often sent, after six weeks' whooping, to the Convalescent Home at Bognor, yet he never heard of any child there catching whooping-cough from a child so sent.

Dr. MEREDITH RICHARDS thought that most of the risk of infection was in the early catarrhal stage. His practice was to exclude children from elementary schools for five weeks, and to exclude contacts for one month.

The CHAIRMAN (Dr. GEORGE CARPENTER) said he dealt with the notes of 466 out-patients and of 100 in-patients, a grand total of 566 cases. Of the 466 out-patients there were 217 males and 247 females.

At 12 months and under	111
Above 12 months and up to 2 years	58
At 2 years and up to 3 years	56
„ 3 „ „ 4 „	90
„ 4 „ „ 5 „	66
„ 5 „ „ 6 „	53
„ 6 „ „ 7 „	21
„ 7 „ „ 8 „	5
„ 8 „ „ 9 „	5
„ 9 „ „ 10 „	—
„ 10 „ „ 11 „	1
Total cases	466

The youngest infant under his care with typical whooping-cough was aged 3 weeks. The liability of conveying the complaint by fomites at its commencement is undoubted, but the virulence of the contagion is quickly lost. For how long children remain infectious after the appearance of the paroxysmal cough is debatable. He considered children free from infection when they cease to expel muco-pus from their respiratory passages. Certainly whooping with the cough does not denote active pertussis, for whooping is very apt to recur from trivial causes in those who have recently suffered from that complaint. Thus an attack of bronchitis is apt to light up a paroxysmal cough in the one-time whooping-cough patient, and illustrations were afforded in regard to these. The whooping habit, when once acquired, is not readily forgotten by some nervous systems. In some children, during the whole of the illness whooping is only a very occasional occurrence. In others whooping is the feature of the complaint. As the disease declines the whoops are usually replaced by coughs without that. It has been stated that the incidence of broncho-pneumonia and pneumonia lead to the disappearance of the whoop. He had noticed both these complications unattended by whooping, but had often seen advanced cases of tuberculosis, consolidation of the lungs, and extensive pneumonia associated with pronounced and frequent whooping. Some observers have held that there is a mysterious relationship between pertussis and measles, but the records of his out-patient cases do not lend much support to that view. There were 35 children in whom measles and pertussis were more or less directly associated, or in 7.5 per cent. of the cases. Varicella attacked 7 of

the 466 cases, or 1.5 per cent.; in 2 the whooping-cough was declining. Scarlet fever and diphtheria were not represented among the out-patient cases.

The complications occurring among these 466 out-patients were as follows:

Chest complaints.—In some 50 of them the absence of chest complaints was expressly stated, and in 293 the physical signs of bronchitis were present in varying degrees. In 8 there were lobar pneumonia and patchy broncho-pneumonia, 3 of them being less than a year old. It is only rarely that laryngitis is the initial prominent feature of the attack, and then it is not until the advent of the typical paroxysmal cough that the nature of the malady is realised.

Sickness was a prominent feature of the complaint, as shown by his out-patient statistics, but not nearly so common as he had supposed it to be. The notes indicate that 159 children, or 34 per cent., suffered from vomiting. On controlling these figures by his in-patient records, where careful observations were made in regard to the question, 62 per cent. of the cases had sickness at one time or another during the illness—nearly double that of his out-patient figures. However, in carefully inquiring into this apparent disagreement, it appears that no less than 11 children vomited only once during the whole attack, and in 13 sickness was present on only two or three occasions. In only one case was sickness excessive, vomiting happening as frequently as ten times during the twenty-four hours. In 7 cases only was sickness pronounced.

Mechanical effects.—In regard to the mechanical effects on the blood-vessels during the paroxysms, he was not prepared to find so small a number with epistaxis (7.3 per cent.) and with hæmoptysis (8.5 per cent.). On comparing in-patient practice with out-patient experiences, he found that 17 per cent. of the in-patients had hæmoptysis in trifling degree, and 17 per cent. had epistaxis. The amount of blood lost from hæmoptysis is usually not much, the sputum being merely streaked with bright blood. He had only once seen blood lost in considerable amount. It occurred in a case complicated by tuberculosis of the lungs. He confessed that the infrequent occurrence of epistaxis surprised him, and for this reason it is quite unusual to find a really healthy naso-pharynx by digital examination in young children. He had methodically examined the naso-pharynx in many hundred presumed-to-be-healthy children, as a matter of fact, over 500 somewhere about the age of five years, and a normal mucous membrane was not common. All conditions of abnormality were present, from slight enlargement of the adenoid follicles in that situation up to a complete blocking of the naso-pharynx with adenoids. And the abnormal mucous membrane is very friable, leaves particles of adenoid tissue on the exploring forefinger, and readily bleeds on contact with it. Epistaxis is therefore a complication that one would expect to arise under high venous pressure.

Ocular hæmorrhages.—There were only five cases (0.9 per cent.) among the out-patients with hæmorrhages of the eyeball, and all had subconjunctival effusions obscuring the sclerotics. Two of them suffered from hæmorrhages into the lids as well, the eyes being well “blackened.” Among the in-patients there were no extra-ocular hæmorrhages, but he met with one limited intra-ocular effusion of blood in a child, aged 22 months, who died of broncho-pneumonia, verified by post-mortem examination.

Changes in the retinal blood-vessels.—He thought that large veins and tortuous blood-vessels occasionally occurred in the complaint as well as optic

neuritis. Hæmaturia is very rare, but he had once met with that complication in a girl, aged 5 years. She had albuminuria also, and after three weeks blood appeared in the urine and continued on and off for a period of two and a half months; when last seen she had neither hæmaturia nor albuminuria for some days. There were no renal casts, but this was the only example of pronounced albuminuria that he found in fourteen recorded observations. In one child there was a trace of albuminuria, so that albuminuria was definitely absent in twelve children.

Prolapsus ani was noted in four out-patients only, and in four in-patients, and in two of the latter it happened very frequently. It was therefore an uncommon complication. Involuntary evacuations of the feces and urine during the paroxysms were far from common. Hernia: But few children were credited with developing ruptures during their illness, viz., five with umbilical and two with inguinal herniæ. The fraenal ulcer is doubtless responsible in some cases for the streaking of the sputa with bright blood. The congested and bloated face of severe pertussis is a well-known sight, and an illustration of the mechanical effects of the cough on the lax tissues of this part; but it is a feature of the disease which surprises by its presence rather than astonishes by its absence. Pains in the chest were complained of by five (1 per cent.), and pains in the abdomen by seven (1·5 per cent.). The abdominal pains were probably mechanical, secondary to the coughing (muscular). But the chest pains can be ascribed to the same cause (muscular) with less certainty. Pains in the throat in sequence to the cough affected one child, and pains in the legs and feet were complained of by two children. Pains in the head (headache) possibly of mechanical origin (impact) were specially noted in nine children (1·9 per cent.).

Otitis media.—Two among the out-patients complained of earache, and otorrhœa developed in five children, three of them being infants aged under twelve months.

Splenomegaly.—Four of these had broncho-pneumonia, and two of them were aged under one. The toxin of whooping-cough appears to have no selective action on the spleen. Splenic enlargement to a slight extent was found in only six of his out-patient cases.

Nervous complications.—Psychical disturbances appear to arise in some children, though quite exceptionally. Whether the toxin of pertussis can produce meningitis is a debatable point, and he narrated an example of optic neuritis and a possible meningitis arising in a boy aged two. He found in the 100 in-patients he had recorded, thirteen of them had convulsions. Of these thirteen children five were under two years of age. In every case the convulsions heralded death. One died of bronchitis, one of empyema, one of collapsed lungs with a dilated heart, four of broncho-pneumonia, two with tuberculous meningitis (one associated with general tuberculosis, the other with slight ordinary broncho-pneumonia), and four with tuberculosis of the lungs (two associated with general tuberculosis). What he found was that in such complications as he had indicated above convulsions were apt to occur. Further, that by the use of the customary remedial measures there might be a temporary recovery, perhaps of a few days, but mostly of a few hours only. However successful the remedies might prove to begin with, the child would subsequently pass into a state of unconsciousness, perhaps with a retracted head, interspersed with convulsive seizures suggesting the complication of tuberculous meningitis. However, this supposition was not warranted as his post-mortem examinations have demonstrated, and in only two instances have tuberculous meningitis been

discovered post-mortem. One of the children, an infant of fourteen months with broncho-pneumonia, was sitting up in its basket when it suddenly fell back blue in the face and motionless. It recovered from that by appropriate remedies, but convulsions soon followed and with a fatal termination. It would appear that in some cases the initial seizure is that of apnoea from spasm of the glottis—what the French call *convulsions internes*, and to which they accord considerable frequency. But of these 100 in-patients there was only one other child that lost her breath and had to be resuscitated by artificial respiration. She also was not convulsed.

Post-mortem observations.—Of the 100 in-patients here recorded no less than twenty-four died. The deaths occurred at the following ages: under 1 year one; under 2 years five; under 3 years six; under 4 years six; under 5 years one; under 6 years three; under 7 years one; and under 9 years one; total twenty-four. Of these deaths thirteen were from tuberculosis; five from broncho-pneumonia; two from lobar pneumonia, one of them displaying a mild colitis in the lower two-thirds of the colon; two from collapsed lungs; one from capillary bronchitis, and one from empyema. Seeing how large a number of children succumb to tuberculosis during the attack of whooping-cough, the prevention of lung complications, the toilette of the naso-pharynx, and the shutting off of all likely avenues of infection are obvious essentials. But the way to prevent the high mortality of pertussis, whether it be caused by ordinary lung disorders, or by collapse of the lungs and by dilatation of the bronchial tubes and cirrhosis of the organs with their associated cardiac complications, or by tuberculous disorders of the lungs and other parts, is to prevent whooping-cough. Therefore the prophylaxis of pertussis is the most important part of its treatment.

Mr. CLEMENT LUCAS showed a remarkable deformity of the chest as the result of whooping-cough in childhood. The patient at the age of four years had a bad attack of whooping-cough, which caused complete collapse of the lower lobes and falling in of the thoracic walls. The thorax above the nipples is fairly well developed, but a deep crease runs inwards from each axilla, crossing the nipple line and bounding the upper margin of the depressed portion.

Philadelphia Pediatric Society.

REGULAR Meeting, December the 8th, 1908, J. P. CROZER GRIFFITH, M.D., President.

Sporadic Cretinism.—Dr. S. A. S. METHENY showed one case and reported another. The first was a girl seen two months ago, then aged 12 months, with broad flat nose; thick, protruding tongue; scanty, coarse hair; ill-developed, badly-nourished body, the child being unable to sit up, and mentally dull. There is also internal strabismus. Marked improvement has followed thyroid treatment, the child gaining two pounds in the last two weeks, while one incisor is coming through. The second case was a boy, aged 14 months, in whom the improvement was even more marked.

Dr. A. H. DAVISSON said that in one of his cases of cretinism, in which

improvement had only progressed to a certain point, Dr. Fussell, who examined the child with him, considered that there was an element of mental deficiency in the case that explained the failure to obtain complete recovery. Dr. Davisson added that he had never seen complete recovery follow the use of thyroid extract.

Dr. JOHN SPEESE said that the transplantation of thyroid tissue has been followed by excellent results in the treatment of cretinism. This method is indicated especially when the drug administered by mouth causes gastro-intestinal derangement. Dr. Speese spoke of several cases operated upon by German surgeons with excellent results, and mentioned the investigations which are being made in the transplantation of thyroid tissue in the spleen and the epiphysial end of bones.

Dr. J. T. RUGH said that he had been struck by the very favourable results in the treatment of these two cases, as he had watched them with Dr. Metheny. He cited another case, seemingly an idiot, which has shown the most remarkable improvement upon thyroid extract and gives promise of practically normal development.

Dr. D. J. M. MILLER said that the treatment of these cases is usually not begun early enough, as the earlier the treatment the greater are the chances of permanent cure. If the diagnosis is made early the chance of a better result follows. But to make the diagnosis early is difficult; since most of the characteristic signs are absent at birth, it is important that we discover the earliest indications. As cases have recovered after years of treatment it is important to continue treatment for a long time; cases are reported showing complete recovery after ten years of treatment.

Dr. S. M. HAMILL said that in only one case had he seen the thyroid treatment carried out conscientiously through a period of years. In this instance the child was under practically constant treatment for a period of five years. During the first few months improvement was marked. After this progress was increasingly less satisfactory up to the end of the time that the patient passed from observation. Treatment was begun when the child was four or five years old, when he had not developed at all mentally. He was able to say a few words, which were difficult to understand. At the end of a year he could talk quite distinctly and connectedly, and was far enough advanced to be sent to school, where he progressed fairly well. On several occasions during the course of treatment, sometimes from the mother's inability to procure thyroid extract or from her desire to stop the treatment, the youngster went without the drug for some weeks. At the end of this time marked retrograde changes had occurred. It was never possible to give the remedy in as full doses as was desired, because any increase beyond a grain three times a day resulted in digestive disturbance. Dr. Hamill had had some experience with other cases, and he felt inclined to recommend the treatment by thyroid transplantation which had been referred to by Dr. Speese.

Dr. METHENY added that he feared these patients would no longer be brought to the dispensary after improvement became slower.

Sarcoma of the Naso-pharynx.—Dr. I. H. JONES showed a boy, aged 14 years, the left side of whose nose had always had some obstruction. At the age of five years it was noticed that the left side of the nose was more prominent than the right. In June, 1907, the left naris began to bleed. In September a polypoid growth was removed from well back in the nasal passage. In two weeks the growth had returned, and in three weeks an

attempt to remove it was prevented by excessive hæmorrhage. Two weeks later most, but not all, of the growth was removed, whereupon it again grew to a much larger size. In January, 1908, a mass the size of a walnut was removed from the left naris. Though the main part of the growth was in the left naris, the tumour was attached to the vault of the pharynx on the right side. On account of the bleeding two large pieces were removed in March, and in July a mass the size of a walnut was taken from the pharynx. By October the entire pharynx was filled, the mass extending down to the base of the tongue. Part of the growth in the naris was snared off in October by Dr. Kyle. In November Drs. Stout and Wharton operated again, removing the mass through the mouth and nose by snaring it off. The boy came through and is in fairly good condition, except for great anæmia, and an almost certain prospect of a rapid return of the tumour.

Dr. G. C. STOUT said that Dr. Wharton and he had assisted Dr. Jones in this last operation, which was simple, though the patient lost a great quantity of blood. The relief following was marked, but the anæmia resulting is very great.

Dr. L. J. HAMMOND has within the past week seen a case of sarcoma in a girl, aged 11 years, that is somewhat analogous to the one we have just seen, the malignancy being first discovered two years ago in the submaxillary gland on the left side. After the removal of this gland the condition remained unsymptomatic for eighteen months. The clinical picture at present shows extensive swelling over the entire left side of the jaw and cheek, the malignant mass protruding into the fauces and mouth, interfering with breathing and preventing mastication, as the mouth is held in a gaping position. Metastasis has already occurred in the spinal cord about the tenth dorsal vertebra, producing total paralysis in the legs and the organs supplied by the nerves below this point.

The Correction of Rotary Lateral Curvature.—Dr. W. G. ELMER showed a girl, aged 12 years, to illustrate some remarks on the application of force in the correction of rotary lateral curvature. She came to him in September, 1908, with a right dorsal left lumbar curve, with a deviation between the parallel lines touching the apex of each curve of $1\frac{1}{2}$ inches, and marked rotation in both dorsal and lumbar regions. This was shown by diagrams of the spine and photographs. Her treatment consisted in the application of a plaster jacket while she was lying prone upon a firm, flat surface and extension applied to the spine. Dr. Elmer described the apparatus which is used by him in the University Hospital, by means of which, with the assistance of a nurse, a jacket can be quickly and easily applied. Much better correction can be secured in this way than by the usual suspension method. There is almost complete muscular relaxation, whereas in the suspension method there is a certain amount of involuntary muscular resistance, and there is not enough pull in the weight of the lower limbs to properly straighten the spine.

The child was given general symmetrical and unilateral exercises daily in the gymnasium, the cast being removed for this purpose and afterwards replaced and firmly bandaged, every effort being made to restore the normal mobility of the spine. A new cast was applied with the extension apparatus every two weeks. At the end of two months a symmetrical cast was obtained. This was at once removed, used as a mould for liquid plaster, and a cast of the child's body obtained. A leather jacket was moulded upon this almost symmetrical torso. She removes this jacket for her daily exer-

cises, and has improved in every way. With her jacket on she is exactly two inches taller than she was two months ago, her figure symmetrical, and her spine straight. The rotation is entirely overcome while the jacket is worn, and the latter fits her body closely at every point. She was presented, not as a cured case, but to show what can be accomplished by the proper use of force in restoring a shortened, bent and twisted spine to its normal contour. The treatment would properly extend over two years before the patient could be called cured. The jacket should be worn a year, and the gymnastic treatment continued for the two years. Dr. Elmer showed a model spine in which he had reproduced the lateral curvature with the rotation which this child originally presented. By increasing the height of the spine two inches, he demonstrated the disappearance of both the lateral curves and the rotation as it had taken place in the child's spine.

Dr. T. A. O'HARA said that he had used as much force as he could, *i. e.* as much as the patient could stand without too much pain, in trying this method upon a recent advanced case which had previously had casts applied in this way several times, and the rotation disappeared perceptibly. Posterior rotation disappeared almost entirely. He considers this method a great improvement over the old suspension method.

Dr. RUGH said that the greatest success achieved is by the combined method of treatment, a fixed form of support being used along with developmental exercises. In cases past thirteen or fourteen years of age bony changes are much more likely, and when they have occurred but little correction is possible. In younger children, however, the results of persistent treatment are good. Dr. Rugh still favours suspension, but places the patient in such position as will best overcome the deformity, and then applies the cast. The earlier in the course of the deformity treatment is begun the better are the results, and fixation and exercises must be carried out until the patient is more than cured.

Dr. R. TAIT MCKENZIE said that he would like to congratulate Dr. Elmer on the result achieved in this case. By continuing his treatment the ultimate result should be complete recovery. He also advised the use of suspension, together with lateral pressure. No matter how thoroughly these cases are corrected by jackets, persistent gymnastic exercises are necessary, even to over-correction. And they must be designed to affect the weakened muscles without producing too great general exhaustion. They should be continued until after all deformity has disappeared. The patient should report for several years at intervals after active treatment has ceased.

Dr. ELMER added that he had intended to emphasise the prone position, the value of which is to obtain general muscular relaxation, a condition impossible to get in suspension.

Congenital Heart Disease.—After reviewing the causes of congenital heart disease, Dr. W. N. BRADLEY described a case of a boy six weeks of age, with great cyanosis, who died of broncho-pneumonia soon after coming under observation. Autopsy showed small ventricles with a greatly dilated right auricle; foramen ovale large and patulous; the orifice of the pulmonary artery practically occluded. Branching off from the thick, dilated pulmonary artery was an anomalous vessel, replacing the ductus arteriosus, emptying into the under surface of the arch of the aorta.

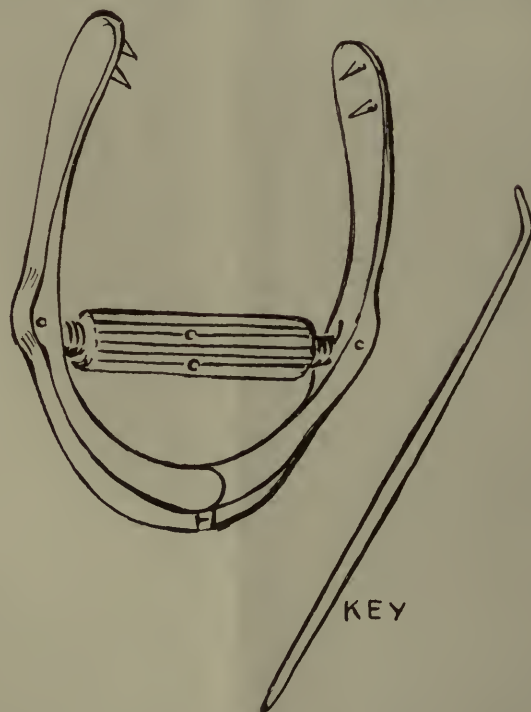
Congenital Obstruction of the Urethra.—Dr. JOHN SPEESE reported the autopsy findings in a child, born dead. There were enormous

bilateral hydronephrosis, hydro-ureter and dilated bladder. The prepuce was œdematous and slightly adherent to the glans, the meatus unobstructed. The anterior portion of the urethral canal was found normal, the prostatic portion pouched, and directly in front of the verumontanum a valve-like band was seen and recognised as the cause of the obstruction. Normal kidney structure was completely absent, the kidneys being transformed into thin-walled fibrous tissue.

Dr. DAVISSON said that he had never seen a case like the one just reported by Dr. Speese, but the fact that obstruction of the urethra in the new-born can occur is proved by the specimen.

Dr. MILLER said that two years ago he had shown to the Society a case of hydronephrosis, with enormous dilatation of the ureters, bladder and kidneys, in which no evidence of obstruction was found. That this is so in a large number of these cases is interesting. He thought that, in cases of this nature, the condition might be the result of spasm due to over-acid urine or other causes, just as pyloro-spasm occurs in infants from hyper-acidity and produces thickening of the pylorus.

Congenital Cleft Palate.—Dr. L. J. HAMMOND exhibited a new



instrument for approximating the palatine processes in cases of congenital cleft palate, consisting of two lateral plates, semi-oval, to conform to the shape of the lateral halves of the superior maxillary bone, fastened together in front by a hinge in order to prevent any play of the lateral half while being introduced. They are brought together by a central right and left

screw, which is so arranged as to bring together or separate the two lateral plates simultaneously. Sufficient force can be employed by this screw to bring together the palatine processes in any case where ossification is not a factor; and where it has advanced so far as to prevent it, an increased pressure kept up by tightening the screw will in a short time secure the same result. The fingers alone may be used to tighten the screw, or when in position the key which accompanies it can best be employed for this purpose. The two teeth, which are set posteriorly along the inner and upper edge of each lateral plate, are of two-fold value, keeping in position by their fixedness in the bony alveolus, and lessening the injury to the spongy alveolar tissue throughout its entire surface over which the lateral plates are applied.

Dr. J. H. MCKEE asked how much discomfort the baby suffers, and how it affects the baby's health.

Dr. HAMMOND added that he used this instrument upon a child but two days old, now three months old, and throughout this period the nutrition and development have been quite in keeping with that of a normal child. He does not believe that the suffering from the instrument amounts to more than a dull ache, and this is confined posteriorly at the point where the teeth of the instrument are anchored.

Abstracts from Current Literature.

Medicine.

Congenital icterus (*Med. Press,* September 2, 1908).—At the Gesellschaft für innere Medizin of Vienna **Reuss** showed specimens from a case of congenital icterus. From the hepatic duct two branches passed into the liver, one ending in a *cul-de-sac* and the other being almost obliterated. The gall-bladder was abnormally small and contained clear fluid, but no outlet could be discovered, while the cystic duct and the bile-duct were quite obliterated. The liver itself was small and of a dark green colour, which under the microscope was found to be due to bile in the fibrous tissue. The cause of this malformation he presumed to be due to foetal inflammation, but as to the ætiology he would not hazard an opinion.

T. R. WHIPHAM.

The early diagnosis of measles (*La Semaine Med.,* January 8, 1908). **Aly-Belfadel**, after examining children who have been exposed to the contagion of measles before the appearance of the rash, states that the prodromal conjunctivitis differs from that of ordinary coryza. In the latter the injection of the mucous membrane usually begins at the *cul-de-sac* of the eyelids, whence it extends to the ocular and palpebral surfaces. In the early conjunctivitis of measles, however, the first sign of injection occurs on the bulbar conjunctiva on either side of the cornea, directly opposite the palpebral fissure. When seen early the redness is in the usual situation of pterygion, but spreads so rapidly that by the following day the whole mucous membrane of the eye is involved. This sign was found in over 70

per cent. of the cases examined, and so early that even a careful examination of the skin with a blue glass failed to reveal any trace of eruption.

T. R. WHIPHAM.

Dyspnœa and dysphagia due to enlarged thymus; recovery after partial removal (*Berlin. klin. Woch.*, April 27, 1908).—**Hinrichs** reports the case of a girl, aged 10 months, who was admitted for an extensive angioma of the ear. At about the fourth week respiration and deglutition became difficult, and on retracting the head a tongue-shaped tumour was forcibly propelled upwards at each expiration, slightly to the left of the supra-sternal notch. During inspiration the tumour could be felt behind the middle of the supra-sternal notch as a small transverse ridge, and there was dulness over the upper part of the manubrium. A large portion of the thymus was removed without an anæsthetic, with an immediate relief to respiration and deglutition. Part of the gland was left behind so as to avoid any influence on development. The portion removed weighed 92½ grains; it was abnormally vascular, but otherwise of normal structure. Dysphagia is an uncommon result of enlarged thymus, dyspnœa being usually the indication for operation. Some have attempted to treat the condition by intubation or tracheotomy, but the latter operation, according to Rehn, has been attended with a fatal result in each of the eight cases in which it has been tried. The writer advocates leaving a portion of the gland behind for the reason already given, and states that removal of the manubrium is preferable to excision of the entire gland as practised both by Purucker and Ehrhardt. Difficulty of deglutition in infants should suggest the possibility of an enlarged thymus even in the absence of stridor.

T. R. WHIPHAM.

A case of diphtheria associated with impetigo (*Lancet*, August 8, 1908).—**T. P. Puddicombe** describes the case of a boy, aged 8 years, who was admitted to hospital with a history of spots on the face for six days and sore throat for one day. There was slight congestion of the fauces and a patch of membrane on the right tonsil, slight nasal discharge, and four definite spots of impetigo on the upper lip with one on the chin. The temperature was 99° F. He did not appear ill, or complain of his throat. Four thousand units of anti-diphtheritic serum were given, and the case ran a normal course with the exception of the occurrence of an enlarged sub-maxillary gland at the end of the third week. The impetigo was cured in a week with ammoniated mercury ointment. Swabs were taken from the nose and throat, also two of the scabs were removed from the upper lip and a swab inoculated from the moist surface underneath. The culture from the impetigo spots gave the most abundant growth, and that from the nose very little. Bacilli resembling the Klebs-Loeffler organisms were found on microscopic examination in each case. Further investigation of the culture by the Lister Institute showed that the organism was really the Klebs-Loeffler bacillus of a virulent type. This case is of very great importance as indicating the possible connection between impetiginous lesions and diphtheria.

JAMES BURNET (Edinburgh).

Kidney lesions in the infant: clinical aspects (*Arch. of Pediat.*, vol. xxv, 1908, p. 330).—**J. M. Brady**.—A routine examination of the urine in infants is rarely made. In males the urine may be obtained by tying a rubber bag round the penis. In females a glass vessel may be placed over

the vulva and the bladder caused to contract by application of the cold hand. This is best done when the infant has been asleep for two or three hours. Though most frequently found in scarlet fever and diphtheria, nephritis may complicate whooping-cough, enteritis, dysentery, malaria, congenital syphilis, eczema, impetigo, burns, scabies, and, in fact, almost every disease. In 1887 Holt described a primary nephritis in infants. The symptoms are indefinite, and the condition is often unrecognised. The diagnosis of slight nephritis cannot be made during life with certainty, since clinically it cannot be distinguished from non-inflammatory degenerative changes, which are practically constant in infants suffering from infectious or non-infectious diseases. Fatal nephritis with anasarca may occur without casts or albumin having been present at any time in the urine, especially after scarlet fever, syphilis and tuberculosis.

J. D. ROLLESTON.

Lymphocytosis and leucopenia in diphtheria (*Arch. of Pediat.*, vol. xxv, 1908, p. 375).—**J. S. Wile.**—Leucocytosis occurs in 90 per cent. of all cases of diphtheria, and ranges from 15,000 to 75,000. It reaches its height within the first three days and diminishes as the toxæmia subsides. Progressively high leucocytosis is of bad omen. The leucocytosis is usually due to increase of the polymorphonuclears, but there may be a lymphocytosis instead. Sometimes lymphocytosis is accompanied by leucopenia instead of by leucocytosis. Leucopenia in diphtheria is usually regarded as a sign of low resistance, and the prognosis is still worse when the leucopenia is accompanied by lymphocytosis. The presence of myelocytes above 2 per cent. is a bad sign, whereas high eosinophilia is favourable. A child, aged 19 months, with diphtheria of the lip showed high lymphocytosis (89 per cent.) and leucopenia (6000). The average lymphocyte percentage and leucocytosis for a child of this age would have been 54 per cent. and 12,000 respectively. On the other hand, there was a daily increasing percentage of eosinophiles and a low myelocyte percentage (1.5–0 per cent.). Recovery was uneventful.

J. D. ROLLESTON.

Hyperpyrexia in measles (*Arch. de méd. des Enf.*, 1908, p. 259).—**Oddo and Sauvan.**—Hyperpyrexia is frequent in scarlet fever, but is less often found in measles, and in such cases is always due to some pulmonary or cerebral complication. The present case was that of a boy, aged 2 years. On the third day of the eruption, which was beginning to fade, the temperature suddenly shot up from 102.2° to 108.4° F. The child was very restless and delirious, and showed some stiffness of the neck muscles. Half an hour later the temperature fell to 102.4° F., and on the following day slowly descended to normal. In the absence of any other apparent complications, especially of any pulmonary localisation, the writers regard the pyrexia as probably due to stimulation of the nerve centres by the toxins of measles during defervescence and the resorption of the toxins.

J. D. ROLLESTON.

Ulcero-membranous stomatitis (*La Pediatria*, 1907, p. 589).—**Giliberti** records the case of a boy, aged 4½ years, who developed ulcero-membranous stomatitis in which Vincent's organisms were found. The anterior pillars and tonsils, especially on the right side, were also involved, but to a less extent. There was diffuse bronchitis and enteritis. The fever was high. Osteo-myelitis of the lower jaw set in, and death occurred. Concetti is quoted as having seen twelve cases of Vincent's stomatitis, four

of which died from necrosis of the jaw and subsequent septicæmia. Three of these patients were convalescent from measles and one from enteritis.

J. D. ROLLESTON.

Orchitis complicating mumps in a child ('*Gaz. méd. de Nantes*,' 1907; and '*Arch. de méd. des Enf.*,' p. 279, 1908).—**Grognot**.—On the eighth day of an attack of mumps a boy, aged 2 years, developed swelling of one testis. Three weeks later suppuration occurred which was treated by aspiration. Complete recovery took place. Bacteriological examination of the pus showed a pure culture of streptococci.

J. D. ROLLESTON.

Hæmaturia in German measles ('*Gaz. degli Osp.*,' 1908, No. 41, p. 439).—**F. Bambace**.—In a recent epidemic of rubella all the cases showed slight albuminuria. After its complete disappearance a fairly pronounced hæmaturia supervened, which lasted for two or three weeks in spite of treatment.

J. D. ROLLESTON.

Vaccinia of buccal and faucial mucosæ ('*Wien. med. Wochens.*,' 1908, p. 1233).—**H. Marschik**.—Vaccinia of the mouth and throat, like that of the skin, runs an acute and typical course, is little affected by treatment, and owing to its rarity is readily mistaken for other conditions, especially diphtheria, from which it can be diagnosed by an absence of a tendency to spread. Marschik records three cases which occurred during the Vienna epidemic of smallpox in 1907. (1) Vaccinia of the tongue in a man, aged 23 years. There was fever and painful swelling of the organ. Gumma was first suspected. There was no history of infection. (2) Vaccinia of the upper lip, tongue and right tonsil in a woman, aged 30 years. The lesion on the lip was first regarded as a boil and then as herpes, while the faucial condition first resembled quinsy and then diphtheria, for which reason antitoxin was given. For a few days there was high fever, difficulty in swallowing, breathing and speaking. The patient had been infected by putting into her mouth the hands of her children, who had recently been scratching their vaccination pustules. (3) Vaccinia of the tongue in a woman, aged 50 years, who had recently been in contact with some inoculated calves.

J. D. ROLLESTON.

Diphtheria in Berlin ('*Berl. klin. Wochens.*,' 1908, pp. 1257 and 1319).—**A. Baginsky**.—In pre-antitoxin years the diphtheria mortality in the children's hospital was never less than 40 per cent. and was usually about 50 per cent. During the 1907 epidemic there were 529 discharges and deaths with a mortality of 11·9 per cent. The epidemic was not a mild one, since 406 of the cases showed some degree of severity. Thirty-eight of the 63 fatal cases were either moribund on admission or owed their death to some secondary disease, *e.g.* tuberculosis or scarlet fever, or to some late complication, *e.g.* hæmorrhage from the tracheal wound or paralysis. The great majority of the cases (125) were between 2 and 4 years, 89 were found in the first 2 years and 16 between 12 and 14 years. The mortality was 32·2 per cent. in the first year, 20·7 per cent. in the second, 17·6 per cent. between 2 and 4 years, 6·9 per cent. between 4 and 6 years, 4·8 per cent. between 10 and 12 years, while of 16 patients between the ages of 12 and 14 years none died. There were 110 laryngeal cases; 32 died, a mortality of 29 per cent. No case which was not laryngeal on admission developed laryngeal symptoms subsequently—a further proof of the value of serum.

Intubation was performed on 82 and tracheotomy on 24, with a mortality of 2.4 and 50 per cent. respectively. Secondary tracheotomy was performed on 25, with a mortality of 68 per cent. Unlike his English and American colleagues Baginsky does not believe in the value of large doses of anti-toxin, and never gives more than 4000-5000 units at a time. He has not observed any advantages from the use of serum in paralysis.

J. D. ROLLESTON.

Hyperpyrexia in whooping-cough (*Arch. de méd. des Enf.*, 1908, p. 262).—**S. Veras**.—A boy, aged 11 months, who had been suffering from whooping-cough for a fortnight, suddenly developed a temperature of 100.4° F. The paroxysms became more frequent, and were accompanied by green diarrhoea. The next day convulsions occurred, and continued in spite of treatment until death, which took place on the following day. The temperature records on that day were as follows: 1.15 p.m., 104° F.; 2 p.m., 105.8° F.; 3.25 p.m., 108.3° F.; 4 p.m., 109.7° F.; 4.40 p.m., *i.e.* immediately after death, 109.5° F. An explanation of the hyperpyrexia is not given.

J. D. ROLLESTON.

Appendicitis in infectious disease (*Journ. des praticiens*, 1908, p. 257).—**Hutinel**.—In every general infection, such as scarlet fever, measles, influenza, pneumonia, or local infection, such as entero-colitis or peritonitis, the appendix runs a risk of being affected, especially if it has already suffered. It is important to bear in mind the existence of these appendicular reactions and to realise that they do not all require the same treatment. In some medical measures are sufficient, while others require early surgical intervention. Hutinel records three cases of measles, in two of which the symptoms of appendicitis developed just before the appearance of the eruption, and disappeared shortly afterwards without operation. In the third case an appendicular abscess formed, and was evacuated.

J. D. ROLLESTON.

Diphtheria in Stettin (*Berlin. klin. Wochens.*, 1908, p. 1094).—**Gabriel**.—From April, 1906, to April, 1907, 541 cases were admitted to the municipal hospital at Stettin; 80 died, a mortality of 14.6 per cent. The importance of the early administration of serum is illustrated by the fact that among sixteen fatal cases of cardiac paralysis the average date of injection was the fifth day, whereas of the cases that recovered the average date of injection was the third day. Acting on the hypothesis that after the acute infection toxones were still being poured into the blood, Gabriel injected each case admitted later than the second day with 3000 to 5000 units daily until their discharge from hospital, *i.e.* during a period of four to six weeks. The serum was injected into the gluteal muscles in each case. In an examination of 500 cases Gabriel found that diphtheria bacilli had disappeared from the throat after the second week in 22.7 per cent., after the third week in 51.5 per cent., after the fourth in 82.5 per cent., and after the fifth in 96.2 per cent. In some cases their persistence was longer, *e.g.* 56, 57, 87, 96 and 97 days, and in one case six months (*cf.* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1907, p. 454).

J. D. ROLLESTON.

Congenital pneumonia (*Thèses de Paris*, 1907-1908, No. 359).—**H. Murit** could find only nineteen examples of this rare condition in literature. In almost every case the mother herself was suffering from pneumonia. Congenital pneumonia occurs principally in the last two months of

pregnancy. It has a special predilection for the base of the lung. It may be double, but is more frequently confined to the right lung. The passage of the pneumococcus into the blood may give rise to a general infection without any local inflammatory determination, so that the transmission can be recognised only by bacteriological examination. Fœtal pneumonia is invariably fatal to the child within two to six days. In half of the cases the mother died also.

J. D. ROLLESTON.

Bell's palsy in an infant, aged 3 months (*'Arch. of Pediat.,'* 1908, p. 446).—**J. C. Gittings**.—The patient was a female twin, hand fed, who had suffered from indigestion and loss of weight. Three months before admission a purulent discharge from the right ear was noted following acute coryza. On admission typical right faucial palsy was present. The right ear showed acute otitis media with granulations in the tympanic cavity and foul muco-purulent discharge. Death took place from bronchopneumonia. There was no autopsy. (*Cf. BRITISH JOURNAL OF CHILDREN'S DISEASES*, 1906, p. 557.)

J. D. ROLLESTON.

Tuberculous infection through milk (*'Pediatrics,'* 1908, p. 422).—**G. C. Schroeder**, in criticising the arguments against the inter-transmissibility of human and bovine tuberculosis, says that no specific difference has been found between human and bovine tubercle bacilli, though it has been constantly proved that the bacilli from these two sources differ greatly in virulence, and that the bovine tubercle bacilli are almost constantly the more virulent. Morphological, biological and bio-chemical tests to determine the source of infection are of doubtful value, since the morphology and virulence of tubercle bacilli can be greatly modified by cultural methods and by passage through animals. All milk intended for food should, therefore, be obtained from undoubtedly healthy cows or should be pasteurised or sterilised before use.

J. D. ROLLESTON.

Carbohydrate incapacity in children (*'Arch. of Pediat.,'* vol. xxv, 1908, p. 203).—**C. G. Kerley** thinks that the consumption of large quantities of sugar is one of the great dietetic errors of the day. The administration of free sugar is unnecessary since the organism can convert all the sugar it needs from the starch taken in the average mixed diet. The commonest sign of sugar incapacity in infants is regurgitation between the feeds. This is most likely to occur with cane sugar, less so with maltose, and least of all with milk sugar. Irritability, scalding urine and eczema are also frequent signs of sugar excess in infants. Recurrent rhinitis, tonsillitis and bronchitis are seen most frequently in sugar susceptibles. Maltose incapacity is shown by regurgitation, vomiting, and loose stools. In infants and older children starch incapacity or excess is not infrequently the cause of constipation. Colic and abdominal disturbance are rarely due to this cause.

J. D. ROLLESTON.

Congenital biliary cirrhosis (*'Arch. of Pediat.,'* vol. xxv, 1908, p. 173).—**J. P. Crozer Griffith** records the second case which has come under his observation (abstract of first case in *BRITISH JOURNAL OF CHILDREN'S DISEASES*, 1906, p. 80). A boy, aged 5 months, was admitted to hospital on December 2, 1906, and died on January 1, 1907. Jaundice had been present from birth, at which he weighed twelve pounds. Since then he had wasted. On admission the child showed intense jaundice,

several purpuric spots on the scalp, and enlargement of the liver and spleen. There was no vomiting or diarrhoea, but the motions after the first day in hospital became white, and remained so. A few fresh purpuric spots developed. Jaundice increased, and the urine collected just before death showed much bile and a trace of albumin. The weight at death was 7 lb. 14 oz. At the autopsy the liver was found larger than normal and of a deep yellowish-green colour. The cut surface was granular, numerous connective-tissue striæ running through it. The gall-bladder was empty. The cystic duct was obliterated. It was impossible to follow out the common bile-duct. Histologically there was found extensive increase of the peri-portal connective tissue and great multiplication of the bile-ducts. The spleen showed moderate hyperplasia of the lymphoid elements with special richness of the pulp in blood and blood pigment.

J. D. ROLLESTON.

Kernig's sign in infancy (*Arch. of Pediat.*, vol. xxv, 1908, p. 167).—**J. L. Morse** examined 2000 children under two years of age, and arrived at the following conclusions: Kernig's sign is almost never found in infancy, either in health or disease, except in meningitis. It is found so rarely in other diseases at this age that its presence in an acute disease justifies, as far as any one sign can, the diagnosis of meningitis. It is never present, however, in some cases, and in many others it is present only intermittently. It occurs with equal frequency at all stages of the disease. It has no apparent connection with the degree of intra-cranial pressure. It is more often present when the knee-jerk is increased than when it is diminished. It is of no value in the diagnosis between the tuberculous and cerebro-spinal forms.

J. D. ROLLESTON.

Acute meningitis of the convexity (*Arch. of Pediat.*, vol. xxv, 1908, p. 207).—**J. Hemenway** records two cases. The first was in a girl, aged 20 months. The symptoms were coma, twitchings, strabismus, nystagmus, vomiting and diarrhoea. There was no bulging of the fontanelle, and the pulse and respiration were regular. Opisthotonos and Kernig's sign were absent. The dises were normal. The cerebro-spinal fluid was clear and sterile. Broncho-pneumonia developed in the third week, but soon cleared up. Death took place from exhaustion on the seventy-third day, preceded by a fresh attack of broncho-pneumonia. The autopsy showed purulent meningitis of the superior and lateral aspects of the parietal and frontal lobes, most marked on the left side. The brain substance was normal. Broncho-pneumonia was present in the left lower lobe. A pure culture of the pneumococcus was obtained from the meningeal exudation and the lung. During life the diagnosis of cerebro-spinal meningitis, acute entero-colitis with nervous symptoms, and general tuberculosis was successively made. The second case was a girl, aged 17 months, whose clinical history closely resembled that of the first case, but the broncho-pneumonia was less severe. Recovery took place, but the child was left mentally defective.

J. D. ROLLESTON.

Chylothorax in a child (*Arch. of Pediat.*, vol. xxv, 1908, p. 195).—**C. G. Jennings and H. M. Rich.**—A child, aged 9 months, suffered from rapid and difficult respiration. Milky fluid was found in the right pleural cavity. In the course of sixteen months thoracentesis was performed eighteen times, an average of twenty-four ounces being removed on each

occasion. The reaction of the fluid was alkaline, the specific gravity 1008 to 1020. Fats varied from 3 to 4 per cent. and proteids from 5 to 8 per cent. No sugar was found. Microscopically the fat was seen in a fine state of emulsion. During the first six months the temperature ranged from 99° to 100·6° F., and then became normal. J. D. ROLLESTON.

Influenza in children (*'Pediatrics,' March, 1908, p. 145*).—A. F. **Brugman**.—Influenza in children is usually a much milder disease than in the adult. Breast-fed children are rarely attacked, but the bottle-fed are more susceptible. Brugman divides the cases into (1) those in which the upper respiratory tract is affected. These are comparatively mild, and often resemble measles. Otitis media and mastoiditis may supervene. (2) Those in which the lower respiratory passages are mainly involved. The symptoms are more severe. Lobar or broncho-pneumonia is very liable to develop. Prostration is marked and convalescence tedious. (3) Gastro-intestinal forms, found usually in bottle-fed children or in older children who have been improperly fed. The prognosis is good in healthy children, in whom the attack is usually mild. Poorly nourished, and especially rickety children, are more liable to develop fatal ear, lung or glandular complications.

J. D. ROLLESTON.

Chickenpox complicated with gangrenous erysipelas (*'Post-graduate,' May, 1908*).—**Watson** relates the case of a boy, aged 5 years, who two days after the onset of erysipelas began to complain of pain in the right groin; the next day an erythematous patch appeared and spread to the abdomen and scrotum, which was swollen to three times its size; blebs also appeared and the temperature rose to 102° F., and the child was restless and looked ill. Ten days later pus appeared beneath the skin of the scrotum, and an adjacent area became gangrenous. The child also became delirious. The sloughs were removed, and after a long illness the patient eventually recovered.

J. PORTER PARKINSON.

Mouth-breathing (*'Canadian Journ. of Med. and Surg.,' June, 1908*).—**Hunter** states that in 10 per cent. of school children there is more or less obstruction in the nares or pharynx, and this, if permanent, leads to mouth-breathing. This produces the following: (1) The alveolar process of the upper jaw grows downward. (2) The tension of the muscles forces the posterior extremities of the upper jaw inward. (3) The upper incisor teeth are crowded forward. (4) The palatal arch is raised. (5) Pigeon breast is produced. (6) Hearing is impaired. Besides this the facial expression and symmetry are impaired. The patient becomes anæmic, and the resistance to pathogenic micro-organisms is much lowered, while the cold air coming in contact with the respiratory mucous membrane produces more or less shock with altered vascularity and subsequent hypertrophy. The writer also considers that the psychic functions may be perturbed by the same cause, and the removal of the obstruction alter a disobedient, immoral youth into a brilliant, exemplary student, "who may in due time become a self-sacrificing medical missionary."

J. PORTER PARKINSON.

Tracheo-bronchial adenopathy and paralysis of the recurrent nerve (*'l'Echo Med. du Nord,' April, 1908*).—**Delearde** and **Hannart** report the case of a boy, aged 16 months, who had suffered from stridor for three months. The child was the subject of congenital syphilis, and had

suffered from whooping-cough at the age of six months. When the infant was six months old he had convulsions, and slight stridor was noticed which had since increased. On examination there was marked stridor, cyanosis, and enlargement of the veins of the neck. Ordinary examination of the child revealed nothing abnormal, but radioscopically there was seen a rounded shadow in the mediastinum in the position of the bronchial glands. Laryngoscopic examination of the vocal cords was impossible, but the conditions of the surrounding parts pointed to their being healthy. It was considered that there was paralysis of the left vocal cord from pressure on the recurrent laryngeal nerve. Anti-syphilitic treatment was begun, but the infant died shortly from vomiting and diarrhoea. At the autopsy the left group of tracheo-bronchial glands was found enlarged but not caseous. There was also some enlargement of the abdominal glands. The lungs were healthy. It was difficult to say whether the enlargement was simple, tuberculous, or syphilitic. Inoculation into a guinea-pig produced no tuberculous lesions, and the trypanosome could not be demonstrated in the liver though the child had obvious congenital syphilis, and it was probable that this was the cause of the trouble.

J. PORTER PARKINSON.

Two case reports (*Montreal Med. Journ.*, April, 1908).—**Mackay** reports some interesting cases. *Dermatitis exfoliativa neonatorum*: A child, born healthy, with no history of syphilis, began to peel at the neck, and in a day or two almost the whole of the epidermis disappeared from most of the trunk and face, and on the arms and legs was a patchy, erythematous rash. There was no fever, and the infant took food well and did not lose weight. The process of desquamation lasted seven days and the epidermis was restored, leaving no scars. *The hæmorrhagic disease of infants*: A male infant, weighing twelve pounds, began to be restless about sixteen hours after birth. The abdomen became distended, and hæmorrhagic patches appeared on the back. The child vomited blood and passed blood-stained motions by the bowel. Pallor and profound weakness ensued, and the child died twenty-four hours after birth. There was no jaundice, no signs of infection, and syphilis could be excluded.

J. PORTER PARKINSON.

Stenosis of the pylorus in infancy (*Canad. Pract. and Rev.*, August, 1908).—**Scudder** reports four cases operated upon, all of which recovered. Posterior gastro-enterostomy was the operation performed in all cases. The ages of the infants were respectively—14 days, 24 days, 22 days and 25 days. The operation was done as soon as the diagnosis was made. The good health and apparent good nutrition of the babies after operation leads one to suppose that nutrition remains normal.

J. PORTER PARKINSON.

Chronic pulmonary œdema, anasarca and anæmia of neurotrophic origin in an infant (*La Pediat.*, March, 1908, p. 180).—**G. A. Petrone** reports the case of a male, aged 11 months. Eight days after birth œdema limited to the feet was noticed, which lasted some months; otherwise the child seemed well. At three months pallor was noticed, which kept on increasing. There was a history of an attack of fever and vomiting with œdema of the legs, hands and face a month before admission. Examination showed dulness and fine mucous râles at both bases, slight enlargement of liver, pallor, and more or less general œdema. There was polynuclear leucopenia. A faint trace of albumin in the urine. Death occurred four weeks later. The autopsy showed anæmia of all the organs,

chronic œdema of lungs, slight fatty degeneration of liver and kidneys. In discussing the pathology of this case the author excludes cardiac or renal origin, because apart from anæmia these organs were healthy; nor does he admit that the anasarca was dependent on the anæmia, because it commenced soon after birth, and because of the disproportion between the two as cause and effect. For the same reason a toxæmic origin must be excluded. He is obliged to fall back on a nervous origin, and places the case in the category of the trophœdema described by Meige and others. In no case, however, has œdema localised to the lungs been recorded as in this. It is also noteworthy that in this case the cutaneous œdema began two months before death, and that, at first localised to the extremities of the limbs and face, it afterwards became general. Trophœdema is sometimes seen as an hereditary affection, sometimes occurring in only one member of a family as in this case; it may be congenital, but is more often acquired about the age of puberty. In this case, although the pulmonary œdema had existed for some time, a congenital origin cannot be admitted, because the infant, after the disappearance of the early œdema of the limbs during the first month of life, remained for some time comparatively well, which would be incompatible with an œdematous affection of both lungs. Trophœdema when once established does not, as a rule, retrocede, and when localised to the limbs does not disturb the general health; in this case, however, the early œdema did retrocede and the special localisation in the lungs caused the death of the infant. The author rejects the theory of Long, of an abnormal development of the middle layer of the blastoderm, and that of Domenici, of a vascular change left by a fetal inflammation. Neither does he share the opinion of Meige, that of a change in special trophic centres, nor that of Vallobra, of lymphatic hypersecretion due to lesions of special secretory centres, nor that of Unna, of a venous spasm. He puts forward two hypotheses; one, that of a lesion of special trophic centres which preside over the nutrition of the blood-vessels, producing a change in the walls of the capillaries with increase of their permeability and transudation of lymph; the other, which admits an obstructed flow of lymph by spasm of the lymphatic vessels due to a lesion of the respective vaso-motor centres.

VINCENT DICKINSON.

The nutritive value of homogenised milk (*'La Clin. Infant.'*, June, 1908, No. 12, p. 360).—**H. Bouquet**.—The principle of homogenisation consists in making the milk under high pressure spurt through a nozzle pierced with very fine holes; on issuing from this it is atomised against a conical agate valve. The fat globules are thus pulverised at the point of issue, having a diameter of two to three thousandths of a millimetre. The ascensional force of these globules, being proportionate to the cube of their radii, is thus practically annihilated. The coagulum found in such milk with hydrochloric acid is light, porous, friable and easily permeable to the digestive juices, and quite different from the firm homogeneous clot obtained under similar conditions with cow's milk, either fresh or sterilised by the ordinary methods. This coagulum, in short, bears a remarkable resemblance to that obtained from human milk. When this milk was administered to infants suffering from digestive troubles, one of the first results obtained was that in twenty-four hours the stools became healthy and natural in amount and lost their disagreeable odour. Vomiting ceased and the body-weight increased.

VINCENT DICKINSON.

Case of congenital aortic stenosis (*'Lyon Médical,' June, 1908, No. 24, p. 1274*).—**E. Weill** and **G. Mouriquand** publish this case of an infant aged 5½ months, without any direct tubercular or specific hereditary antecedents. There was a marked thrill over the præcordial region, systolic in rhythm, and most intense at the apex; a bruit at the apex conducted but a little way towards the axilla and not at all into the vessels of the neck; its intensity was more marked to the left than to the right of the sternum, and was but faintly audible in the back. Radioscopy showed hypertrophy of the left ventricle. Functional symptoms were little marked; there was no habitual cyanosis, but sometimes on drinking there was an attack of dyspnoea with cyanosis. The autopsy showed persistence of the arterial duct connecting the aorta with the main trunk of the pulmonary artery; the aortic valves were the seat of marked thickening, being almost cartilaginous, retracted on themselves and attached by their extremities, the orifice measuring 3.5 cm., while the pulmonary orifice was 4.1. The occlusion of Botal's ring was complete. There was no interventricular communication.

VINCENT DICKINSON.

Pathology.

The physiological consequences of inequality in the mammary glands (*'La Clin. Infant.,' August, 1908, No. 16, p. 481*).—**Variot** and **Lassablière** examined 550 wet-nurses at the Hôpital des Enfants-Assistés, and found a difference in volume of the two breasts in 419. Predominance of the left breast was noticed in 51 per cent., of the right in 25 per cent., equality in 24 per cent. The average excess in volume was 1.9 for the left breast and 1.4 for the right. The difference in volume of the breasts had a direct effect on the secretion of milk, particularly on its quantity and composition, which vary in each breast. When the inequality was marked the gland tissue in the smaller seemed atrophied, and only able to furnish an amount of milk relatively smaller in proportion to the other breast, which was hypertrophied. Thus in 40 instances the quantity of milk contained in each of the two breasts varied, according to the difference in volume, between 46 c.c. and 335 c.c. of milk. In 17 instances analysis was made separately of the milk from each breast, and it was found that the chemical composition varied, and was most marked in proportion to the unequal development of the breasts. The variation was most marked in the case of fat, amounting to 52, 61, 93, and even 120 per cent. in extreme cases. With regard to sugar, it amounted to a diminution of 57 to 50 per cent., and with regard to casein, to an increase from 2 to 5 per cent. The habitual predominance of volume of the left breast seemed due to the fact that the wet-nurses, for reasons of convenience or habit, suckled more often with this side, and the secretion became more feeble in the other on account of suction being less frequent and prolonged. Asymmetry of the mammary glands is probably transmissible by heredity. To remedy this condition the infant should be suckled first from the smaller breast.

VINCENT DICKINSON.

Dwarfism and mitral stenosis (*'La Presse Médicale,' August, 1908, No. 63, p. 497*).—**M. Labbé** describes a case and enters into an interesting discussion on the subject. He asks whether the mitral lesion is primary and causes the dwarfism, or whether both conditions are the result of

the same *dystrophic* and *hypotrophic* cause. These two theories have their adherents: (1) Maurice Raynaud was the first to admit that mitral stenosis might cause dwarfism. There is a class of dwarfs who have none of the deformities of myxœdematous achondroplasia, but are like small, well-formed men. On account of the smallness of the heart and vessels the blood is distributed in less quantity to the tissues, which therefore develop slowly and imperfectly. This constitutes an angioplastic dwarfism. At the time of puberty the organism undergoes a trophic stimulus, but owing to the circulatory failure growth is irregular, and a number of infantile characteristics persist. In favour of this theory is the fact that a cardiac lesion, not congenital, but acquired, as the result of a rheumatic endocarditis in a child, prevents its development; *à fortiori* much more will a congenital lesion cause dwarfism. The relations which exist between the development of the mitral orifice and that of the organism explain certain clinical peculiarities of congenital mitral stenosis, and especially why it does not come into prominence before puberty, and why it is better tolerated than the acquired lesion. Mitral lesions show themselves clinically by symptoms of functional insufficiency. During the first years of life the heart with congenital mitral stenosis can fulfil its functions; it is small, and sends into the circulation a small quantity of blood at each systole, but the organism does not suffer since it is itself imperfectly developed. At the time of puberty, with the development of the organism there is increased activity of nutrition, and if the heart is unable to keep pace with the development of the body the equilibrium is disturbed and the mitral stenosis shows itself. It is then that the hypotrophic influence of the lesion intervenes in order to hinder the development of the organism and maintain the equilibrium. In a word, dwarfism may be considered a phenomenon of compensation which retards the fatal result of asystole. But it is not so when mitral stenosis supervenes in a grown-up person; here adaptation can no longer take place and cardiopathy soon ensues. (2) The second theory is that of Gilbert, who saw in mitral stenosis and hypoplasia lesions of the same kind, simultaneous and not consequent, resulting from an arrest of development. We now know that hereditary syphilis and tubercle are two great causes of mitral stenosis, and also that these two infections are essentially hypotrophic and that many cases of dwarfism are due to them. We are then tempted to refer dwarfism to syphilis or tuberculosis without the dystrophic intervention of cardiopathy, and to assert that the infection has been the cause at the same time of mitral dwarfism, cardiac and vascular, and of the dwarfism of the dental apparatus and of the body. In order to affirm that in certain cases dwarfism is the result of the cardiac lesion and not of a general dystrophic disease, this dwarfism of cardiac origin should have characters which distinguish it from dwarfism of syphilitic origin, and this has not as yet been demonstrated.

VINCENT DICKINSON.

Disturbances caused by pap food (bread boiled in water) (*La Clin. Infant.*, August, 1908, No. 15, p. 450).—G. Variot and P. Lassablière fed young dogs on pap for three months, with the result that: (1) Animals so fed were very inferior in weight and size to control animals fed on bread and milk; (2) the inequality and delay in their increase of weight was far in excess of that of their increase of stature, the former being 34 to 60 per cent. and the latter 68 to 96 per cent. in comparison with control animals; (3) some dogs died of broncho-pneumonia, others were in bad condition;

a return to milk diet was followed by marked improvement. The experiments show that pap food, such as is commonly used among the poor, is an aliment very inefficient for the development and health of young organisms. It also reveals this interesting physiological fact, that in the course of growth each tissue has a special independent nutritive activity and grows on its own account, since the stature due to the bones is relatively less delayed than the weight.

VINCENT DICKINSON.

Primary tuberculosis of the mesenteric glands (*'Amer. Journ. of the Med. Sciences,' August, 1908*).—Hess states in a review of this subject that of the published cases in which the type of organism had been determined over 60 per cent. were due to the bovine form of the tubercle bacillus. In children infections with the bovine type formed by far the greater number, while amongst adults the human form predominated. The author believes that the greater frequency with which children are infected is to be attributed, not merely to greater exposure in childhood, but in all probability to a feebler natural resistance manifesting itself in a greater permeability of the intestine, or by want of protective power in the lymphatic glands. On the other hand he suggests that possibly adults may acquire an immunity towards the bovine type of the bacillus. With regard to the lesions produced by the two forms no pathological or clinical difference can be made out. The presence of caseation or calcification bears no relation, as some have held, to the type of infecting organism.

T. R. WHIPHAM.

Therapeutics.

Red light in the treatment of measles (*'La Presse Médicale,' August, 1908, No. 63, p. 500*).—F. Simonescu calls attention to the favourable action of red light on the evolution of measles and its complications, especially broncho-pneumonia and hyperpyrexia. There is no need of costly installations like that of photo-therapy after Finsen's method. A simple room, painted red, with windows and furniture of the same colour, is sufficient to render effectual service, or, lacking this, merely covering the windows with large red curtains and having a lamp with a red glass burning in a corner. Probably the morbillous agent and its toxin lose their pathogenic properties very rapidly under the influence of red light. It acts differently to the way a serum acts, having an intense abortive action rather than a curative. The patient in this case is under the influence of a simple febrile state which quickly disappears. Broncho-pneumonia is not only benefited by the red light but cured. The idea is that the pulmonary complications are produced by the same eruption which is localised on the tissues and on the pulmonary parenchyma.

VINCENT DICKINSON.

Otology, Laryngology, and Rhinology.

The more important germs found in aural discharge (*'Canadian Journ. of Med. and Surg.,' August, 1908*).—Royce states that the admixture of germs that is usually obtained from aural discharges may be lessened by taking the more recent cases only, and by thorough irrigation of the canal, after which the smear is taken from the pus as it issues from the opening in the tympanic membrane. The most important germ found is the *Streptococcus pyogenes*, for it is found alone or combined in all the cases of a

fulminant type. When it is mixed with other germs such as the pneumococcus, the staphylococcus, or the spirillum of Vincent, the cases show special malignancy. **Deunch** showed that 86 per cent. of pure streptococcus cases came to operation, and when mixed with other organisms 90 per cent. In some cases the *Streptococcus mucosus capsulatus* is the ætiological factor; this appears singly, in pairs or chains, stains with aniline dyes and Gram's method. It is non-motile and does not form spores. It grows best in Loeffler's solidified blood-serum. When the pneumococcus appears in pure culture the cases are usually mild, but when it is associated with the streptococcus unusual malignancy is noted.

J. PORTER PARKINSON.

Surgery.

Gonorrhœa in children ('*Arch. of Pediat.*,' 1908, p. 547).—**J. Merrill**, at a symposium of the Chicago Pædiatric Society, traced the history of epidemics of gonorrhœa in children. **G. H. Weaver** dealt with the pathological aspects. In children an intermediate carrier is usually responsible, except in ophthalmia, where infection takes place during birth. Females are most attacked owing to the susceptibility of the urethral and vaginal mucous membranes in young girls. Children from two to five years are most susceptible. An attack of scarlet fever renders subsequent infection particularly easy. In girls the urethra is probably first involved in most cases, but the vagina is invaded early, and infection spreads from the cervix to the uterus, tubes and peritoneal cavity. The acute process is soon over, but a subacute or chronic process may persist, and probably be connected with mal-development of the sexual organs in later life. **W. J. Butler** and **R. Vail** recommended vaccine-therapy as superior to any other method of treatment.

J. D. ROLLESTON.

Erysipelas treated by streptococcus vaccine ('*Arch. of Pediat.*,' July, 1908, p. 527).—**J. H. Borden**.—A female child, aged 24 days, received a scratch on the tip of the nose. Two days later erysipelas developed, and involved the entire nose, upper lip, and both cheeks, whence it spread to the forehead, covered the scalp, and reached down to the shoulders behind and over the chest to the nipples in front. One hundred and sixteen hours from the onset 3,000,000 dead streptococci were injected into the thigh muscles. Temperature before injection 103° F., three hours later 104·9°. Twenty hours after the injection the temperature was lower than it had been for three days, and the face had entirely cleared up. A second injection of 4,000,000 streptococci was then given. After a slight rise the temperature fell to normal within thirty-six hours. Further recovery was uneventful.

J. D. ROLLESTON.

Patent urachus in a child, aged 4 years ('*Pædiatrics*,' 1908, p. 356).—**J. F. Erdmann**.—The patient was a healthy boy with normal genitals. The umbilicus showed a mushroom-like eversion with a crater-like centre surrounding a small opening from which urine leaked, or was sometimes ejected in a stream four to twelve inches in height. At times a fairly good stream was passed by the urethra. On opening the abdomen the urachus was found to be three quarters of an inch wide and three inches long. The umbilicus with about an inch of the urachus was excised. A catheter was kept in the bladder for three days and subsequently micturition was normal.

J. D. ROLLESTON.

Reviews of Books.

TRANSACTIONS OF THE SECOND INTERNATIONAL CONGRESS ON SCHOOL HYGIENE. London, 1907. Edited by JAMES KERR, M.A., M.D., D.P.H., and E. WHITE WALLIS, F.S.S.

THE three stout volumes of valuable matter which so fittingly follow the successful Congress held in August, 1907, will form a lasting monument of the arduous labours so efficiently carried out by Dr. Kerr and Mr. Wallis. The ordinary adherent of a scientific congress, or even the officers of such a gathering, attends the closing meeting with the feeling that all work is ended, and he lays aside his responsibilities with his badge. But for the secretaries the work is but half begun. Organisation and the realisation of a successful meeting are, to some extent, rendered easier by the willing help of other officers and members of committees, but when the Congress is concluded and the helpers have dispersed, the secretaries have their most difficult task before them, namely, the collection and arrangement of papers into a uniform volume of transactions. This is the most arduous and wearying duty of all, for readers of papers are notoriously difficult to manage, and proofs are delayed in return until editors are driven to the verge of distraction. Dr. Kerr and Mr. Wallis have done their work with a method which is beyond praise. They have collected and arranged the enormous mass of material in so orderly a manner that the reader can place a finger upon any particular paper or resolution in the readiest manner possible. In vol. i will be found the business part of the proceedings, the officers, opening ceremony, inaugural address, and closing meeting. The lectures and set discussions come next, and these are followed by detailed reports of Sections 1, 5, 10, and 11. In vol. ii the reports of Sections 2, 7, 8, and 9, with the lectures and set discussions which relate to the work of these Sections, are placed; whilst vol. iii contains the reports of Sections 3, 4, and 6, together with an appendix, comprising committee and council lists, lists of members and delegates, awards, statements of accounts, and a general index to all three volumes. Each volume has, in addition, an index of its own.

It would be impossible to notice in a short review the number of papers published in these 'Transactions'; it must be enough to say that they contain the best work of the greatest experts in school hygiene to be found, not merely in England, but all over the globe, and in their contributions will be found school hygiene from every point of view—philanthropic, scholastic, pedagogic, medical, architectural—and from every clime. The fact that this important Congress was held in London appears to have given some impetus to the subject in England, despite the narrow-minded opposition of an alleged "liberal" government, opposition which was an open secret at the time and which was, luckily for school hygiene in Great Britain, timely defeated. It is not unlikely that the first rays of the dawning of a more enlightened educational movement were quickened by this Congress, and that it paved the way for the more ready acceptance of school medical inspection in this country. The writer, whilst at some of the meetings of the Congress, found his thoughts turning to two cherished names among England's greatest men—Charles Dickens and Thomas Henry Huxley, both of whom

worked so earnestly in the cause of education; what cause for satisfaction would both these great men have found could they but have listened to the work of the Congress, or have dipped into the three ample volumes which have been its consequence?

We have nothing to give but praise to these 'Transactions' and to the energetic secretaries who have arranged and edited them.

A TEXT-BOOK OF DISEASES OF THE EAR. By MACLEOD YEARSLEY, F.R.C.S., Senior Surgeon Royal Ear Hospital, etc. Price 18s. net. London: Kegan Paul, Trench & Co., Ltd., Dryden House, Gerrard Street, 1908.

MR. YEARSLEY has given us an example of progressive otology, more correctly speaking, progress in British otology. For we are convinced that ten years ago no British authority could have so handled his subject. The fact that the testing of hearing power is now dealt with in a rational manner, that definite deductions are to be drawn from certain combinations in the results obtained from those tests, is in itself an enormous stride. Mr. Yearsley's chapter upon the estimation of hearing also shows that however hard the student studies these problems he requires practical instruction as well. Mr. Yearsley gives an unusually full account of the varieties of rupture of the tympanic membrane, both as to cause and the situation of the rupture, illustrating his remarks by a detailed description of numerous instances which have come under his own observation.

The descriptions of the various inflammatory diseases of the middle ear, their complications and treatment, are full, clear and comprehensible, though the part on brain abscess is, maybe, too short and not sufficiently explicate for a book of this size; but in a special hospital, it is true, but few cases of this which come under this category are seen. The same cannot, however, be said in relation to the disease known as oto-sclerosis, for here Mr. Yearsley has given a full account of the disease, its history, pathology, course, symptoms, and treatment, showing a most intimate acquaintance with this disease, which will be of the greatest assistance to many aurists in this country, and, of course, to all students. Mr. Yearsley is to be especially congratulated on this chapter, as in Deuch's work the disease received almost no notice. The only thing we doubt is whether, in quoting Fisherich as injecting sixteen drops of fluid down a Weber-Liel's catheter, Mr. Yearsley tried to see how long it would take and what force would be required. We are sorry to find Mr. Yearsley so pessimistic as to the effects of treatment in oto-sclerosis.

The chapter on disease of the internal ear affections is one of the best, if not the best, in the book, from which but few will fail to derive interest or instruction. From its nature there is but little new to be expected, but the admirable way in which Mr. Yearsley marshals his facts and authorities and presents a clear picture of each condition is most effective.

The remaining chapters upon general disease in relation to aural affections in deaf-mutism, etc., are fully up to the standard of the rest of the book.

Mr. Yearsley has made enormous progress as a writer, and this book will carry his name down to posterity after having made him a place in his own time.

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MYXEDEMA IN CHILDHOOD.

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ALTHOUGH cretinism in its fully developed form is well recognised, the lesser degrees of thyroïdal insufficiency in childhood are apt to be overlooked. The following cases are illustrative of that condition :

CASE I.—Robert W—, aged $7\frac{1}{2}$ years, was brought to Hospital in June, 1902, because he was “not growing.” He is the fifth child of the family, three having died in infancy, and one (a younger sister) suffers from fits and is mentally defective. The mother is a healthy woman who presents no signs of myxedema, but when pregnant with this child her health was indifferent and she was much worried. He was born at the full time and was bottle-fed. When about six months old he attended the hospital for some time for “wasting,” after which he did not get on fast and did not walk, talk, or cut his teeth until he was nearly two years old. He had no other illness.

His condition when first seen is shown in the photograph (Fig. 1). He was very short for his age (height, 33 inches), and showed some evidence of previous rickets in the shape of his head and curvature of the legs. His facies was somewhat myxedematous, the complexion being yellowish, the skin rather dry, the hair harsh and the lips waxy. The milk teeth were still present and were mostly carious. The hands were “podgy.” The thyroid could not be felt, but the viscera were healthy.

His mental condition was rather quiet and dull and his memory defective ; his speech slow and to a large extent unintelligible ; his temper good.

Under thyroid treatment he rapidly improved, and after a month he had grown two inches. Five months after treatment was begun he had grown four inches, but his weight was unaltered. By October, 1904, his height



FIG. 1.—Case 1 (on the left) alongside a normal boy of the same age.

was 40 inches, he was well and bright, and, as his mother said, was now “really like a boy” ; he could also read and count a little.

When last seen (January, 1909) he was fourteen years of age and measured $47\frac{1}{2}$ inches in height. He has been taking thyroid fairly continuously, and except that he is under-sized looks quite normal. Mentally he is still decidedly backward, and has to attend a “special” school.

CASE 2.—Ursula P—, first seen in February, 1905, aged 6 years. She

was brought for advice "because she did not grow." She is the first child of a family of three, the two younger being healthy. She was born at the full time, the mother's health during the pregnancy being good, and she was bottle-fed. From the age of five months she has been backward. She held up her head at three months, but did not talk until she was two or walk until she was two and a half years. Except for constipation she has always been healthy.

Her appearance when she first came under observation is shown in Fig. 2. She was a small, chubby child with fat, red cheeks, thick (not coarse) hair and a smooth skin. The epicanthic folds were rather marked and the lobes



FIG. 2.—Case 2 (on the left) alongside her normal sister, who is three years younger.

of the ears adherent. Her height was 34 inches. There was no evidence of rickets, and the organs were all healthy. The trachea could easily be felt. The hands were somewhat spade-like.

Her mother did not consider her mentally backward. She was alleged to have a good memory and to know her alphabet, and to "sit and think a lot." She was not at school.

Under thyroid treatment ($\frac{3}{4}$ gr. night and morning) she improved rapidly, and by the end of three months had grown two inches and looked much more normal, being brighter and less puffy-looking.

Her condition one year after treatment was begun is shown in Fig. 3.

She is now (February, 1909) ten years of age and quite a healthy-looking girl, 4 ft. 1½ in. in height, and without any signs of myxœdema. She is, however, still somewhat backward at school. She has been taking thyroid powder regularly.

There can be no doubt that in neither of the above cases could the child be fairly described as a full-blown cretin, but they clearly belong to that group of cases of infantilism in which the arrest of



FIG. 3.—Case 2 (on the right) alongside her sister after one year's treatment.

development is due to defect of an internal organ—in this instance the thyroid. Such cases are sometimes spoken of as “myxœdematous infantilism,” or, by Hertoghe,* as cases of “benign chronic hypothyria,” and it is permissible to assume that in these the thyroid, although not completely absent, is comparatively ill developed or inactive.

* ‘Nouvelle Iconographie de la Salpêtrière,’ xii, 1899, p. 261.

The myxœdematous symptoms may apparently arise at any period of childhood, and although in the above examples they set in early,



FIG. 4.—Case of juvenile myxœdema.



FIG. 5.—The same after treatment.

they sometimes do not make their appearance until about the period of puberty (juvenile or adolescent myxœdema). In Figs. 4 and 5 a case of this sort is shown in a girl, aged 15 years, before and

after treatment, but unfortunately the details of her history have been lost.

Whether *all* cases of infantilism which respond to thyroid treatment are to be classed as examples of infantile myxœdema is uncertain, but Hertoghe considers that many cases of so-called "idiopathic" infantilism (Lorain type) are really instances of masked myxœdema (myxœdème fruste), in which the thyroidal defect is very slight. He has described two such.*

The following case, of which I regret there is no photograph, is perhaps an example of this "masked myxœdema":

CASE 3.—Doris T—, aged $9\frac{1}{2}$ years, was first seen in July, 1903, because she did not grow. She was an only child, born at the full time. The mother's appetite during her pregnancy was very poor, but she is quite a healthy woman. The patient looked like a fairly normal child of five. She had no appearance of myxœdema except that the hair was somewhat coarse and dry, but the skin was fine and smooth. The features were well cut and the hands normal. The voice, however, was curiously deep-toned. The milk teeth were still all present. Her height was only $3\frac{1}{2}$ feet, her weight 2 st. $10\frac{1}{2}$ lb. Mentally she seemed bright and alert, and her mother said painted cleverly.

Under thyroid treatment the patient grew rapidly, quickly lost her milk teeth, and acquired a new crop of finer hair.

One year after treatment was begun her height was 3 ft. $9\frac{1}{2}$ in. and her weight 2 st. $13\frac{1}{2}$ lb.

When last seen (September, 1908) she was still taking thyroid. Her age was $14\frac{1}{2}$ years, her height 4 ft. 10 in., and her weight $5\frac{1}{2}$ st. She looked quite normal but still rather under-sized, and her voice had remained very deep. Mentally she seemed certainly rather backward for her age, but she was said to be "good at some things," *e. g.* languages and music, but "very bad at arithmetic."

The immediate response to thyroid treatment in this case suggests defective activity of the gland, but in appearance the child was much more like a case of idiopathic infantilism than one of myxœdema.

* 'Nouvelle Iconographie de la Salpêtrière,' xiii, 1900, p. 411.

ON SOME FORMS OF CHRONIC LUNG DISEASE IN CHILDHOOD.*

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THE following remarks, necessarily brief and fragmentary, may be of some interest to those who have not the opportunity of seeing the large amount of clinical material that an Out-patient Department affords, for the cases dealt with, though of comparatively infrequent occurrence, are yet of considerable interest and importance. This is not the less at the present time, when in the routine inspection of school-children a number of such cases will certainly be "discovered," and their exact nature may in some cases be a matter of doubt.

I will define the kind of case to which I intend to refer. The course is always chronic and usually extends over years (sometimes into adult life); certain pulmonary symptoms, as cough and expectoration, are nearly always present, and they are attended—up to a certain point—with little or no cachexia. More or less definite physical signs are generally present, and some degree of clubbing of the fingers is the rule. Now lung disease answering to this description is not particularly common in the first decade, though I think more frequently to be met with than is supposed. Out of 5000 consecutive cases of disease of all sorts in childhood (mostly under ten years) among my out-patients, I noted 58 cases of chronic lung trouble. But in estimating frequency one has to remember that these cases rarely continue for a great length of time under the same doctor, and most of them drift up sooner or later to an Out-patient Department, particularly a special one for children. My remarks are based upon 117 cases collected from my own Out-patient Department over a period of four years.

The affections to which I propose to confine my remarks are :

- (1) Tuberculosis : phthisis of the adult type.
- (2) Delayed resolution of pneumonia, croupous or catarrhal.
- (3) Chronic bronchitis.
- (4) Bronchiectasis.
- (5) Fibrosis.

* Being, together with illustrative clinical cases, a Post-Graduate Demonstration given at the Leeds Public Dispensary.

(6) Gross lesions following the internal rupture of an empyema or abscess.

I will first review the chief clinical features which are more or less common to these various affections, and will endeavour to consider them somewhat on the lines on which one would conduct an investigation of a particular case.

Cough.—This is the most constant symptom common to the whole series, and is usually the chief complaint. A very common statement is that the cough has been continuously present for some years, or even from birth. There are frequently periodic exacerbations, but occasionally there is freedom from the cough at intervals.

Expectoration.—This is perhaps the next most frequent symptom, and the manner of it may be characteristic or not. On the other hand it may be entirely absent and in some cases replaced by vomiting. As everyone knows, in all young children the rule is for sputum to be swallowed, and this often masks a valuable sign. But when the pulmonary secretion is excessive or foetid it is generally spat out (or not infrequently vomited). The fact that a young child spits at all is such an exception to the rule that it should always lead to close investigation of the case. Expectoration may be characteristic, either with regard to the sputum itself, or the manner in which it is got rid of. There may be, for instance, the typical nummular sputa of phthisis or the profuse and characteristic discharge of bronchiectasis, or the same with the foetor of the later stages; there may be occasionally a discharge of pure pus in quantity from a ruptured empyema.

Aspect and bodily habit.—This again is frequently sufficiently characteristic to enable us to make, at a glance, a tolerably accurate guess as to the nature of the case. Two common types met with are these: (*a*) of tuberculous aspect, and (*b*) of cyanotic aspect. With the former everyone is familiar: I should like merely to emphasise one point concerning it—the usual presence of anæmia. Apart from the septic cases, to which I will return, one may say that marked anæmia in these chronic lung cases generally means tuberculosis, while a marked cyanosis generally negatives the presence of that disease. With the cyanotic aspect the picture is as follows: The child is generally fairly well nourished, though possibly somewhat languid: and the skin may be sallow than obtains in perfect health. Especially, however, the lips are full-coloured and the cheeks venulous; in more marked cases the neck veins are rather turgid and even dyspnoea may be apparent. The marked contrast with the phthisical aspect is striking.

But apart from a definitely tuberculous or cyanotic appearance there are two groups of cases. The first, a large one, includes the earlier and slighter cases in which a characteristic aspect has as yet not developed. The second group exhibits what may be termed a "septic cachexia." This is of infrequent occurrence in childhood, and occurs only in those advanced cases in which the contents of the dilated bronchial tubes have become secondarily infected and the sputum fœtid. As a result of this the patients may suffer from the results of septic absorption with its consequent wasting and anæmia. Here even the picture is different enough from that presented by tubercle, for the septic cachexia, being later in time, is generally engrafted on the cyanotic habit and the combination thus obtained is still more striking. Still, I would say, borrowing the words of a great clinical observer, that "types of this kind will not bear too close a scrutiny—it would puzzle anyone to distinguish a [bronchitic] child from a tuberculous one. These types have sprung out of experience; knowledge of this kind is personality which is not easily shared but is nevertheless real property."

Having heard the initial complaint and noted the aspect, one almost instinctively then glances at the finger ends. From these much instant and reliable information may be gained. Often there will be noted more or less clubbing—this in the non-tuberculous cases. In the early stages of these affections, it is true, clubbing may be absent: the earliest indication of its occurrence is a filling out of the skin round the root of the nail, which I have several times observed to be followed by definite clubbing. At the same time it is important to remember that in children the skin at the root of the nail is, much more frequently than in adults, of a smooth, stretched-out appearance, which may be mistaken for a genuine pre-clubbing stage. In phthisis, except in the extremely chronic fibroid variety, clubbing does not occur. There may be curving of the nails; this is frequent in chronic bronchitis, but is distinct from even the earliest form of true clubbing. In phthisis there is rather a tendency to wasting of the soft tissues of the finger tips. The cause of this phenomenon (clubbing) is debated, though its association with chronic lung disease is well known. Chronic cyanosis seems to have a definite causal relationship to it, hence the frequency of clubbing in the cases under consideration and in congenital heart disease. When there is chronic pulmonary suppuration, as in the developed fœtid stage of bronchiectasis, it may reach an extreme degree, and there may even be enlargement of the ends of the bones and of the joints—the "chronic pulmonary osteo-arthropathy" of

Bamberger and Marie. Clubbing is also of great diagnostic value in empyema.

The history.—This is the next point that claims our attention, and in many cases a patient and detailed investigation is necessary for it to be correctly understood. But the histories are usually long ones, and a long history in early childhood lends itself to inaccuracy in the mouth of the less intelligent mother, as we can all testify from experience. We inquire, firstly, as to the duration of the case, whether months, years, or over the whole life of the patient, and whether it dates from any illness, and if so, the nature of the latter. All observers are agreed that most cases of bronchiectasis follow on a broncho-pneumonia, especially when such broncho-pneumonia complicates measles or whooping-cough. Then, whether any sputum is expectorated, and whether this is ever foetid; also the quantity and time of this expectoration, especially whether this occurs at regular intervals, as the first thing in the morning.

In this connection one must be careful not to “lead” too much, and not to accept too readily the history of periodic spitting of large quantities.

Intercurrent attacks of pulmonary inflammation are extremely common and must be inquired about, and the chronic persistent cough traced back between and preceding these attacks. And even then one will find, often enough, that cough originating in infancy is dated from the day of birth, an initial illness being forgotten, or its details being obscured by the lapse of time, and the intercurrent pulmonary attacks may assume undue importance in the eyes of the mother and thus interfere with the accurate retailing of the serial facts of the case.

The usual incidence and symptoms of tuberculosis should of course be investigated, and if pyrexia is found to be present it is generally an evidence of the presence of tuberculosis except in those cases which have foetid sputum.

In some such way as this the case first arrests our attention, and there then remains physical examination of the chest, which I will deal with very briefly under each class of case. This examination may lead sometimes to the discovery of gross organic change. On the other hand, in many cases it is so nearly negative as to leave the exact diagnosis a matter of uncertainty.

We will now consider the types of disease a little more in detail.

(1) *Tuberculosis: phthisis of the adult type.*—This is the most important thing to diagnose or to exclude, and mistakes are by no

means infrequent, though generally to be avoided by attention to the whole aspect of the case. To begin with, there is no doubt that the diagnosis of pulmonary tuberculosis in childhood is overdone. In this connection let me quote Goodhart. He says: "We may all find, if we look back upon our notes of earlier years, that the large majority of the cases which raised the question of pulmonary tuberculosis have subsequently solved it by the restored health of the children. In looking over my own notes I find that no less than 152 out of a total of 233 must be considered doubtful. There was dulness at one or other apex, some clicking crepitations, deficient movement, or bronchial breathing, but which has never come to anything, and in most of which what seemed certain at one examination was very uncertain subsequently. One passes through phases of experience; at first all cases are tubercular; a ripper knowledge shows advanced pulmonary tuberculosis to be comparatively rare."

Is not this the experience of many of us? It is certainly paralleled by my own.

Pulmonary tuberculosis in children is, of course, extremely common, but is usually in the form of a miliary tuberculosis or of a bronchopneumonia, with perhaps cheesy masses or limited cavitation. These cases, difficult enough to be sure about in the earlier stages, do not give rise to much confusion with the kind of case we are now considering—in fact, do not come into our series.

But phthisis of the adult type we must include, and this is not common in children. One scarcely ever sees a case under ten years of age. Again, in phthisis localisation of the lesion is nearly always apical (though this has more exceptions in earlier than in later life), and in the other classes of case of which I am writing physical signs, if localised, are most invariably basal. At the same time, cases of bronchiectasis or fibrosis, as Dr. Theodore Fisher* has recently pointed out, do occur from time to time, and then the diagnosis must be made from other features of the case and not from physical signs. Tuberculosis may play some part in the bronchiectatic cases by means of a secondary infection. This, however, is comparatively rare, usually occurs later on in the disease, and it is certain that most of such cases are non-tuberculous throughout.

Delayed resolution of a pneumonia, croupous or catarrhal.—I should like to make here what almost amounts to a digression to briefly refer to cases answering to this description, but which really have a very intimate relationship to developed bronchiectasis.

* 'Lancet,' January the 2nd, 1909.

That such cases occur much more frequently than is supposed anyone who pays close attention to a large number of cases must admit. Yet very little emphasis is laid on the point in text-books. The condition is nearly always found after a catarrhal pneumonia, which, as Pepper says, may last for months, though the resolution of a lobar pneumonia may exceptionally be delayed for a considerable time. Rotch puts it very definitely when he says "in a certain number of cases, after a child has had an attack of acute bronchopneumonia the physical signs of consolidation may persist, though apparent recovery has taken place so far as the general symptoms are concerned."

With this my own experience fully agrees; probably all of us have had similar cases in which the severe symptoms of a bronchopneumonia have passed away, but have left cough and perhaps some expectoration, together with some amount of impairment of health, and localised physical signs indicating partial consolidation of the lung. There may even be a tendency to clubbing of the fingers. And then after weeks, and sometimes months, the case has completely cleared up, and I have a very strong impression that among the children of the poor such instances are not at all uncommon. It is these cases especially which pay for careful attention and nursing.

Delafield has proved that, instead of this cure on the one hand or a fatal result on the other, the child may be left with a chronic form of the disease which may last for many years, and be accompanied by cough, dyspnoea, and at times by fever.

Though for the moment I am only concerned to draw attention to the existence of a group of cases which, though persisting for a considerable time, do eventually recover, yet it should be borne in mind that such a lingering course of catarrhal pneumonia introduces other risks. Some cases may develop phthisis or acute tuberculosis, and others again may be permanently crippled by fibroid changes in the lung, by general dilatation in the bronchial tubes, or extensive and thick pleuritic adhesions.

When considering bronchiectasis I shall show that there is a strong presumption that many of these "clearing-up" cases are really instances of early acute bronchiectasis which undergoes recovery.

(To be continued.)

THE FOOD OF ELEMENTARY SCHOOL CHILDREN.

By A. H. GERRARD, M.D.Lond., M.D.(State Med.)Lond.,
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IN a very large measure our methods of feeding are archaic. We eat much the same food as our forefathers, it is cooked in much the same way, and in many instances we commit the same errors. This comes about because we pick up our methods of feeding at our parents' table, and few have any idea why it is that they eat certain kinds of food under certain conditions. As a matter of fact, we are all prone to eat what we like rather than what is good for us, and as a rule there is an utter disregard of all food values.

Surely in these days when so much attention is given to other hygienic subjects the time has arrived when the knowledge of food values, both from a nutritive and economic point of view, should be regarded as one of the conditions of elementary education. Haphazard methods of gaining knowledge are never good, and do not tend to make for progress. There can be little doubt that as a nation we feed badly, which, however, is not the same thing as being badly fed, and this applies more especially to the poorer and working classes. For the purpose of obtaining some definite information on the kinds of food taken by the poorer classes some 1000 breakfasts and 1000 dinners were examined. The constituents of these meals were obtained by the teachers at different schools asking the children to write down what they had for dinner and breakfast each day. The number of individuals questioned was close upon 500, as in some cases a series of meals was taken during a whole week. The children interrogated ranged from six to nine years of age. The schools selected were in the north, east, and central London areas. The period of the year was February. Although too much reliance cannot be placed upon the statements of children, yet the analysis of the material collected gave at least some insight into the food and method of feeding used by the working classes.

Looking at the breakfasts first, it was found that whilst 61·2 per cent. of the children have bread and butter—and butter includes margarine—only 9 per cent. have bread and dripping. Bread and jam or marmalade, or material of that character, was taken by 12 per cent., and cake by 6 per cent. Bread alone was the sole breakfast food of 1 per cent. Some form of animal proteid was

taken by 14·5 per cent., bread and milk by 2 per cent., and only 3 per cent. partook of cereal food. With regard to beverages taken, tea constitutes 84 per cent., coffee 4 per cent., cocoa 9 per cent., and milk 2·8 per cent. The analysis of these breakfasts brings out clearly one or two points. It is evident that the mother does not appreciate that bread and dripping is as nutritious as bread and butter, and much cheaper, for dripping must be to hand in more than nine out of every hundred homes, especially in these days of cheap meat. The utility of sugar as a substitute for fat is in some measure realised, but its use is somewhat restricted on the ground of cost. The influence of cost is shown, too, in the limited use of bread and milk, milk being a dear food. The chief point which is brought out, however, is that cereals are not in favour with the working classes as a breakfast food. This can be accounted for on several grounds. First, the English matron cannot, as a rule, cook oatmeal in such a way as to produce a palatable dish. Secondly, good nutty flavoured oatmeal is not easily obtained in the poorer districts of London, for by being kept it often has a bitter taste. Thirdly, it is not generally known that oatmeal contains a large proportion of fat, and with milk forms an almost complete diet. It is evident, too, from the above figures that breakfast is not regarded as a proteid meal, though the reason for this is difficult to explain save on the ground of cost.

On examining the dinners it was found that 88 per cent. had an animal proteid constituent, or if cheese and batter pudding be excluded 84 per cent. Potatoes were taken by 63 per cent., and 22 per cent. had in addition one or more vegetables. Cereals in some form were taken by 10 per cent., the pulses by 2·3 per cent., and tart or pudding by 20 per cent.; pickles by 2·5 per cent. With regard to beverages, tea or coffee was taken by 8·5 per cent. There was an absence of proteid in the case of 7 per cent. These figures appear to indicate that on the whole there is little deficiency of nitrogenous food, but some of the individual dinners show pretty conclusively that there is little or no conception as to the part played by proteid. Cheese is taken about as often as the pulses. The former is looked upon as an adjunct or something to fall back upon, and it is open to doubt whether the suggestion that cheese might often replace meat would be met with anything but ridicule. The pulses are nearly always taken in addition to animal proteid and not as a sparer. The cereals are usually taken as some sort of pudding or after-dish. The chief source of carbohydrate appears to be the potato, which is in some measure supplemented by

bread. Tea and coffee is apparently replacing beer, which in the whole series was not once mentioned. The disappearance of beer is good, but the benefit is depreciated by the substitution of tea and coffee. On subjecting the non-vegetable proteid to further analysis, meat and egg constitute 72 per cent.; soup or stew, 22 per cent.; fish, 8 per cent.; and cheese, 2 per cent. Of the different kinds of meat, 24 per cent. consisted of beef in the form of joint, and 12 per cent. chop or steak; sausage, 6 per cent.; rabbit, 9 per cent.; pork, 9 per cent.; bacon, 2 per cent.; liver and bacon, 2 per cent.; mutton as joint, 15 per cent., and meat pudding or pie, 8 per cent. Brawn, ham, and tripe together constitute about 5 per cent. of the meat.

There can be little doubt that the great mass of our population is entirely ignorant of even a fundamental knowledge of the meaning of the term "food." The majority look upon the meal as something to eat, and indeed often express themselves in such terms. The statistics given above show some evidence of this, but it is brought out more clearly by some of the actual meals selected at random from the collection. Such dinners as meat, biscuits, pudding and milk; pea-soup and custard; potatoes and rice; two eggs, bread and butter—all point in the direction of lack of knowledge rather than in that of insufficiency of material. Haricot beans and bread and butter, which was the dinner of one child, constituted a cheap but dietetically sound meal if given in proper proportions. So, too, where the diet is more abundant. The same evidence of lack of knowledge is to be seen as in such a meal as the following: ham, beef, tongue, bread-pudding, bananas, and tea. Nearly all the lists of dinners given by the children show strong evidence of Sunday being regarded as the weekly feast. The Sunday dinner is invariably the one with the greater variety of food, with the largest proportion of animal proteid, and is nearly always hot.

Though the above figures are open to several objections, such as the questionable veracity of children and the comparatively small number of meals, yet they are able to show in some measure that the poorer constituents of our population require better knowledge of the meaning of food and food values. It is necessary that the worker should know that whilst he is able to buy a meal it can nearly always be physiologically complete. That is to say, if he can give his children bread and jam for dinner he can give them bread and a small quantity of cheese, which is better. He should know, of course, why it is better. The only way in which this knowledge can be imparted is by giving elder scholars a course of

instruction in elementary dietetics. As in all such cases, it is futile to attempt to induce parents to alter the methods they have employed for years. The proper place for such instruction is in our elementary schools, which are beginning to be regarded as places where the young may be grounded in knowledge which shall equip them in the life struggle and not solely as a means to help them to rise in life.

Such knowledge of food and feeding should be of great benefit to the individual and the nation from the point of view of both economy and physical development. It would be far better to teach children what to eat and why they should eat it rather than how to cook dishes they will never taste.

THE SPERMATIC CORDS IN CHILDREN.

By EDRED M. CORNER, M.C., F.R.C.S.,

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DURING my period of office as assistant surgeon to the Children's Hospital, a number of surveys were undertaken to establish definite data, especially with regard to facts easily observed. The present note is of interest in connection with the great predominance of right inguinal over left inguinal herniæ, the proportion of which is nearly four to one when present alone. The figures are taken from Table I in my paper on "The Distribution of Herniæ in Children."

The figures suggest that the disappearance of the processus vaginalis and its accompanying sub-peritoneal tissue is a little later on the right side than on the left. From this clinical observation it would appear that the right spermatic cord is more likely to contain a hernial sac than is the left, but not nearly in the proportion of clinically recognisable hernia—four to one.

The spermatic cord is a composite structure, being made up of many parts—the vas deferens and its vessels, the spermatic artery, the pampiniform plexus, the cremaster muscle, nerves, lymphatics and connective tissue, which is continuous with that of the sub-peritoneal tissue above and that of the scrotum below. Besides these there may be present the remains of the imperfectly obliterated processus vaginalis. The fatty subperitoneal tissue about the cord or of an imperfectly obliterated processus vaginalis is naturally more common in children than in adults. The spermatic cords of

adults are not fatty except in the varicoceles of older subjects. Carmichael, of Edinburgh, examined 86 children, and at Great Ormond Street I have examined 200, when no recognisable hernia was present, to ascertain the approximate percentage in which the spermatic cords of the two sides were equal and unequal:

	Carmichael. Per cent.	Corner. Per cent.
Cords equal	21	30
„ unequal	79	70
Cord of right side the larger	59	65
Cord of left side the larger	41	35

Thus our figures, agreeing in the main, differ in detail. The two deductions which can certainly be made are:

(1) That in about three out of four children the spermatic cords are unequal in size, that of the right side being usually the larger.

In contrast with this, in 85 per cent. of 100 adults at St. Thomas's Hospital the spermatic cord of the left side was the larger. The inequality in the spermatic cords of children is due to the imperfect obliteration of the funicular process of the processus vaginalis and the imperfect absorption of its surrounding subperitoneal fat; in adults it is due to the physiological formation of a greater number of spermatic veins on the left side than on the right—what might be called a mild form of natural varicocele.

(2) That in children the *right* spermatic cord is the larger in two thirds of the cases, whilst in adults the *left* spermatic cord is the larger in nine tenths of the cases.

THE DISTRIBUTION OF THE HERNIÆ IN CHILDREN.

By EDRED M. CORNER, M.C., F.R.C.S.,

Surgeon to the Children's Hospital, Great Ormond Street, and to St. Thomas's Hospital, in Charge of Out-Patients.

By far the most frequent form of hernia in childhood is a ventral one between the divaricated recti abdominis muscles. This is well shown in the second table, as it was present in no less than 61·3 per cent. amongst 2600 hernia cases. The hernia by itself, next in frequency, were right inguinal and umbilical, each forming only 4·2 per cent. From this it may be roughly stated that herniæ between the

66 DISTRIBUTION OF THE HERNIÆ IN CHILDREN.

divaricated recti are fifteen times more frequent than any other hernia. Further, any other hernia was more frequent when present with one between the divaricated recti than when present by itself. For instance, umbilical herniæ alone formed 4·2 per cent., but when accompanied by one between the divaricated recti the percentage rose to 2·1. The ætiological significance of these data have been treated partially in a paper published in the 'Lancet' of July the 13th, 1907, to which reference is now made.

FIRST SERIES OF 700.

	Per cent.
Right inguinal	38·3
„ and left inguinal	10·8
„ „ „ and umbilical	8·0
„ inguinal and umbilical	12·0
Left inguinal	10·6
„ „ and umbilical	2·7
Umbilical	16·2
Ventral	0·9
Femoral, right and left	0·15
Complicated by a ventral hernia with divarication of the recti	14·3
Single herniæ	66·0
Multiple herniæ	34·0

SECOND SERIES OF 2600.

Herniæ present in 32·7 per cent. of patients attending the Surgical Clinic.

	Per cent.
Right inguinal herniæ	4·2
„ „ „ and hernia through divaricated recti	4·7
„ „ and umbilical herniæ	0·8
„ „ „ „ and hernia through divaricated recti	2·3
Left inguinal herniæ	1·3
„ „ „ and hernia through divaricated recti	2·1
„ „ and umbilical herniæ	0·4
„ „ „ „ and hernia through divaricated recti	0·5
Umbilical herniæ	4·2
„ „ and hernia through divaricated recti	13·3

	Per cent.
Herniæ through the divaricated recti	61·3
Right and left inguinal herniæ	1·0
" " " " and hernia through divari- cated recti	1·4
Right and left inguinal and umbilical herniæ	0·1
" " " " " and hernia through divaricated recti	1·5
Ventral herniæ (other than between the recti)	0·9

A CASE OF ANGIO-LIPOMA.*

By F. VICTOR MILWARD, M.B., B.C., F.R.C.S.,
*Assistant Surgeon, the General Hospital, Honorary Surgeon, the
 Orthopædic Hospital, Birmingham.*

THE patient, a child, aged 10 months, was operated upon by me last November for an angio-lipoma, the size of a small orange, situated in the left parotid region. During the two months that the tumour had been under observation it had grown rapidly. A vertical incision was made from the front of the tragus to the middle of the neck in the line of the carotid artery. The bifurcation of the artery was dissected out and the external carotid was tied with Van Horn's catgut, while the lower part of the tumour was pulled up out of the way. The enucleation of the growth was next effected, and while some serious venous hæmorrhage was met with from vessels passing through the pterygoid notch, the ligation of the external carotid artery proved a most valuable step in preventing hæmorrhage. It was found that to separate the parotid gland from the tumour was an impossibility, and also that the branches of the facial nerve ran and branched through the growth. With very great care the orbital, nasal, and oral branches were dissected out, and the tumour and parotid gland were entirely removed. The branches of the nerve, completely separated from their surroundings, were exposed for two and a half inches. The wound was next sutured, and it subsequently healed by first intention. Immediately after the operation there was complete left facial paralysis, and from the amount of exposure and stretching that the nerve-fibres had undergone it seemed hardly possible that such an excellent recovery would ensue

* Shown at the Birmingham Branch of the British Medical Association, February the 11th, 1909.

as was now seen to be the case. The face is now symmetrical in repose, and slight paralysis only is apparent under muscular action.

I wish to emphasise the value of ligation of the external carotid artery prior to the removal of large vascular tumours of the face in children, in whom hæmorrhage is especially dangerous.

CONGENITAL ABSENCE OF THE STERNAL PORTION OF THE RIGHT PECTORALIS MAJOR MUSCLE.

By JAMES E. H. SAWYER, M.A., M.D.Oxon., M.R.C.P.Lond.,
*Physician to Out-Patients, the Children's Hospital, and Casualty Assistant
Physician, the General Hospital, Birmingham.*

THE patient, a boy, aged 11 years, came to the Children's Hospital, Birmingham, in December, 1908, suffering from chorea for about one month. The boy had always been delicate and was



FIG. 1.—Congenital absence of the sternal portion of the right pectoralis major muscle.

undersized and thin. On examination of the chest it was noticed to be very asymmetrical when inspected from the front. There was a large hollow in the upper part of the chest on the right side, which was due to the entire absence of the sternal portion of the

pectoralis major muscle. The clavicular portion of the muscle appeared quite normal, and when it was contracted the lower border stood out prominently, giving the chest a very peculiar appearance. The right nipple was not so large nor so prominent as the left; it was situated a little higher and about half an inch nearer the middle line. There appeared to be no other congenital deformity. The clavicles were the same size, and the ribs on the right side were normal in shape, number, and of equal size to those on the left. The photograph, which was taken by Mr. Emrys Jones, Assistant to the Radiographer of the General Hospital, Birmingham, shows very well the peculiar appearance of the chest. The cyrtometric tracing was taken at the level of the third costal cartilages, and demonstrates the great difference in the shape of the

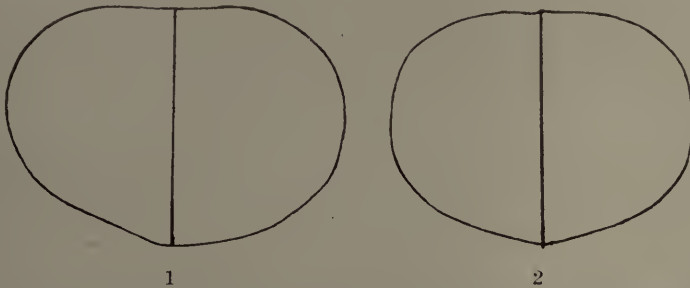


FIG. 2.—Cyrtometric tracings: 1, at the level of the third costal cartilages; 2, at the level of the sterno-xiphoid articulation.

two sides of the chest, due to the absence of the right pectoralis major muscle. A cyrtometric tracing taken below the level of the nipples was practically equal on the two sides.

In January, 1909, I saw a similar deformity in a woman, aged 47 years. The sternal portion of the left pectoralis major was entirely absent. The right mamma was very large, but on the left side there was no mamma and only a very small nipple, like that of an infant's. She also had a congenital deformity of the left hand; as the fingers were webbed, and each finger had only two phalanges. She stated that when she was a girl she knew a boy who had a similar peculiarity of the chest, but she did not know what had become of him. I have never seen this congenital deformity before, and it is remarkable that two instances should come to my notice within one month of each other.

Editorial.

THIRD INTERIM REPORT OF THE ROYAL COMMISSION APPOINTED TO INQUIRE INTO THE RELATIONS OF HUMAN AND ANIMAL TUBERCULOSIS.

THE Third Interim Report of the Royal Commission appointed to inquire into the Relations of Human and Animal Tuberculosis is of such great importance that we give a summary of their investigations. The report shows the result of inoculation and feeding experiments made with the fæces and milk of naturally tuberculous cattle. Three of the animals showed clinical evidence of tuberculosis, but in none of them during life could any tuberculous disease of the udder be detected. The object of the investigations, which were made by Dr. F. Griffith, was to ascertain if tubercle bacilli were present in the fæces and milk of these animals. The Royal Commissioners point out that the experiments were dictated by the knowledge of the fact that dirt of various kinds from cows and the cow-shed is almost always present in the milk when it reaches the consumer. They state that "cows suffering from extensive tuberculosis of the lungs must discharge a considerable number of bacilli from the air-passages in the act of coughing, and some of the bacilli thus expelled may find their way into the milk. But our experiments indicate that the excrement of cows obviously suffering from tuberculosis of the lungs or alimentary canal must be regarded as much more dangerous than the matter discharged from the mouth or nostrils. We have found that even in the case of cows with slight tuberculous lesions tubercle bacilli in small numbers are discharged in the fæces, while as regards cows clinically tuberculous our experiments show that the fæces contain large numbers of living and virulent tubercle bacilli." *Tubercle bacilli, therefore, may be present in the milk without tuberculous disease of the udder, since the tubercle bacilli which escape from the bodies of diseased cows in the excrement are almost certain to infect the milk of healthy cows in the same cow-shed.*

DESCRIPTION OF METHODS USED.

The following were the methods used to ascertain if tubercle bacilli were present in the faeces and milk of the animals. A considerable quantity of faecal matter was required, and in order to obtain it the action of the rectum was stimulated by the injection into it of air through a sterile glass tube, and the faeces were received directly into a pail which was applied to the margin of the anal orifice. These precautions were necessary, as in one case there was a purulent discharge from the vagina, and in this case and two others extensive tuberculous disease of the uterus was found at the post-mortem examination. A portion of the faeces was rubbed up in a mortar with sufficient salt solution to moisten them, and then an emulsion was formed by pressing through muslin. An inoculation of 0.5 cubic centimetre of the emulsion into guinea-pigs by the intra-peritoneal method almost invariably caused death from acute peritonitis, while after the inoculation of 0.05 cubic centimetre all the animals survived. Guinea-pigs and swine, the latter animals about eleven weeks old, were fed with the emulsion in order to test the infectivity of the faeces. The milk of five cows were tested for the presence of tubercle bacilli. The teat was washed with a solution of perchloride of mercury and with methylated spirit. A metal catheter, connected by pressure tubing to a flask, was inserted into the milk sinus of the udder, a separate apparatus being used for each quarter, and the milk was withdrawn by the exhaustion of the air in the flask. The milk thus obtained was tested for tubercle bacilli by the inoculation of guinea-pigs and occasionally of rabbits.

SUMMARY OF RESULTS.

"The faeces of five naturally tuberculous cows, out of the total number of six so far investigated, have been found to contain living and virulent tubercle bacilli.

"Three of these animals, cows B, C, and F, were severely diseased, and were eliminating large numbers of tubercle bacilli; this is shown by the occurrence of tuberculosis after the inoculation of very small doses of faecal matter in all but one of the guinea-

pigs which survived a sufficient length of time, and by the fact that all the swine fed became tuberculous.

"Two of the cows, A and D, were in apparently excellent condition of health. One, cow A, showed after death a caseous and cystic posterior pharyngeal gland, a few small nodules in the intestine, and slight disseminated tuberculosis. The fæces of this animal caused tuberculosis in one out of four swine fed; the other three swine and all the guinea-pigs inoculated remained healthy. The other cow, D, had tuberculosis of the lungs, bronchial and mediastinal glands, without any disease elsewhere. The fæces of this animal caused tuberculosis in three guinea-pigs and two rabbits; two swine fed remained healthy.

"The fæces of the sixth cow, E, which had slight tuberculosis of the lungs and a mediastinal gland, did not give rise to tuberculosis in any of the animals inoculated. Four, cows A, B, C, and F, out of the five cows which gave positive results, showed some tuberculosis of the alimentary tract, but in at least one case, cow C, it was not sufficient to account for the large numbers of tubercle bacilli in the fæces. These bacilli must have been coughed up from the lungs and swallowed.

"Tuberculosis was present in the uterus of each of the severely infected cows, and the uterine discharge contained numerous tubercle bacilli. Such a condition constitutes another source of infection.

"The milk of two of the cows, B and C, caused, though not invariably, tuberculosis in guinea-pigs inoculated with relatively small doses. The milk was withdrawn from the udder by catheterization, and post-mortem examination of the udders revealed no microscopic evidence of tuberculosis. Small pieces were examined histologically by Dr. Eastwood and were found to be normal, but it is of course impossible positively to exclude microscopical lesions. The milk of a third cow, F, caused severe tuberculosis in every guinea-pig which lived a sufficient period of time after inoculation. The udder, except for four small nodules in the left hind quarter, was normal to the naked eye; the animal was very ill at the time the milk was collected.

"The milk of the remaining two cows, D and E, tested, did not give rise to tuberculosis in any of the animals inoculated."

The Royal Society of Medicine.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

Friday, January the 22nd, 1909, 5 p.m.

Dr. PORTER PARKINSON in the Chair.

A Case of Rheumatoid Arthritis in a young child was shown by the CHAIRMAN. Dorothy G—, aged 2½ years, began to suffer from swollen and painful joints in June, 1908; the ankles and wrists were first affected, then the knees, elbows and other joints. There was much par-articular swelling with excess of fluid in the joints. The joints were at times acutely painful, and the temperature rose occasionally to 103° or 104° F.; there was much wasting, and the child had a pallid earthy tint of skin, and appeared to be suffering from a slow toxæmia. There was general enlargement of the lymphatic glands, especially in the axillæ and groins. The spleen was much enlarged, extending four fingers' breadth below the costal margin. Over parts of the trunk and legs was a diffuse brown pigmentation resembling that seen in adults suffering from the same disease. The lungs and heart were normal. There was extreme wasting of the muscles of the legs and forearms. Intervals of apyrexia alternated with fever, often up to 103° F. or higher, lasting for a week or so, during which the joint pains and swelling, the lymphatic and splenic enlargements, and the cachexia were all much increased. There has been great improvement during the last six weeks both in the general and local symptoms.

Dr. MILNER BURGESS said he thought the name "rheumatic" should be dropped in connection with such cases, as it seemed to be the general opinion that there was no relation to rheumatism.

Dr. E. I. SPRIGGS said that occasionally on seeing a case for the first time there seemed to be some difficulty in diagnosis between subacute or chronic rheumatism and rheumatoid arthritis, though that difficulty generally vanished when the case was carefully gone into. Recently he showed before the Clinical Section an adult male with true rheumatoid arthritis, who had enlarged glands in the groin, axilla, and above the elbow; he also had exophthalmic goitre. In the latter disease there was frequently pigmentation. And on looking up the whole class of cases of exophthalmic goitre, rheumatoid arthritis, and Still's disease, one found that two features were sometimes common to them: enlargement of the palpebral opening, with some exophthalmos, which had been described in connection with Still's disease—though he had not seen it—and pigmentation, which was common in exophthalmic goitre, and was present in Dr. Parkinson's case. His own case was like Still's disease with regard to the enlarged glands, but the spleen was not enlarged. The spleen did not enlarge in the adult as a result of infection as in the child. In Victoria Hospital the joints involved were punctured, and a little of the effusion went into the needle, but all efforts to cultivate it were fruitless.

Dr. PARKES WEBER asked whether Dr. Parkinson had examined for tubercle in the case by von Pirquet's reaction. It could do no harm to the patient, and might give valuable information.

Dr. PARKINSON, in reply, said he did not use the term "rheumatic" in the case. He liked the term "rheumatoid," because it did not bind one to anything; it merely meant the condition looked something like rheumatism. It was not osteo-arthritis, and there was not the deformity to justify the use of the term "osteitis deformans": it was an affection simply of soft tissues. Dr. Spriggs' case of rheumatoid arthritis in which glands were enlarged was interesting, as showing the link between the two varieties. In answer to Dr. Weber, he thought the appearance of the joints excluded tubercle. If that had been the cause there would have been some breaking down by that time. But the condition, including the spleen, was improved, and skiagrams did not show anything wrong with the bones. He would have the von Pirquet's reaction tried.

A Specimen from a Case of Congenital Cystic Disease of the Kidneys and a Skiagram taken during life was shown by Dr. T. R. WHIPHAM. Both kidneys were from a male infant, aged 11 months, who was brought up for whooping-cough and found to have an enlarged abdomen, with bulging in both flanks and some dilated superficial veins. Two masses could be felt symmetrically situated, and the anterior edges extended from the costal margin to the middle of Poupart's ligament. The tumours were slightly movable, and the percussion note over them was dull. The liver could be felt $1\frac{1}{2}$ inches below the costal margin. The abdomen had been noticed to be large since birth. The specific gravity of the urine varied from 1005 to 1010. The urine contained a varying amount of albumin—from .1 to .8 per cent. The quantity of urea was from .4 to 1.8 per cent., the total being from 1.03 to 3.12 grm. per diem. The child, who was not greatly troubled by the cough, became rapidly worse. A transient œdema of the hands and feet occurred for a few days, and towards the end the liver became enlarged and some purpuric spots appeared on the trunk. Death was ushered in by convulsions. The kidneys weighed $7\frac{1}{2}$ ounces each. They were uniformly pale and tough, and showed little difference between the cortex and medulla. They were crowded with innumerable cysts, the largest being the size of a very small pea. The capsules were somewhat adherent. The pelves were dilated and contained a deposit of uric acid sand, but the ureters were normal, and there was no obstruction to the flow of urine.

Dr. PARKES WEBER congratulated Dr. Whiphham on having diagnosed the condition during life, as scarcely ever had that been done. He asked on what grounds it had been done. They appeared to be that both kidneys were enlarged, and that the child was passing albumin. In 1896 he saw a child—and made a note of it in the Pathological Society's 'Transactions'—in which the same clinical signs were present. After death, the size and whiteness of the kidneys resembled the present ones, but there were no small cysts. It was diffuse symmetrical infiltration of both kidneys with a lymphocytic growth; he did not use the term "lymphosarcoma," as that was objected to by some. They were infiltrated by a growth of cells resembling lymphocytes, but the tubules and glomeruli were not destroyed. Both that condition and the one shown were so rare that Dr. Whiphham could hardly have excluded them.

Dr. ROBERT HUTCHISON asked if any member could tell him whether congenital cystic kidneys were ever unilateral. Recently he saw an adult with a tumour in the abdomen which he was quite sure was congenital cystic kidney, but he could not feel anything on the other side. He did

not agree with Dr. Parkes Weber as to the difficulty in diagnosis. He could recall two cases of the condition in which the diagnosis was made during life, and he had thought it not difficult to do; if a nodulated tumour could be felt in both loins and there was suspicious urine, he thought the diagnosis of congenital cystic disease was justified.

Dr. E. CAUTLEY said he thought one was justified in diagnosing unilateral cystic kidneys if he could only feel one. There were several cases on record in which one kidney showed those signs yet the other kidney was enlarged although that also was cystic.

Dr. PARKES WEBER said there were cases on record in which one kidney had been explored and found to be cystic, and afterwards it was found that both kidneys were cystic.

Dr. FORSYTH said a fortnight ago he had a post-mortem on a case of cystic kidney. It was admitted for a left-sided abdominal tumour, and was shown at the last M.S. examination. It was seen by a number of people, and the general view was that it was probably pancreatic in origin, and possibly splenic. Post-mortem, two enormous cystic kidneys were found, and it was difficult to understand why the right one was not felt. There was slight pancreatitis, but nothing like cystic formation in that organ.

Dr. WHIPHAM replied that the reason he did not consider the condition which Dr. Parkes Weber described was that he did not know anything about it. He diagnosed the condition as what he had stated, as he did not know what else it could be.

A Case of Fibrosis of the Left Lung of considerable standing in a child, aged 6 years, was shown by Dr. JEX-BLAKE. There is a history of phthisis on both sides of the family. The patient had whooping-cough at twelve months and "pneumonia" at four; no other illnesses. At five he was admitted in April, 1906, to St. George's Hospital with fibrosis of the left upper lobe and bronchitis; while in hospital he showed irregular fever—99°–101° F. every evening. In January, 1908, he was admitted to the Victoria Hospital with the complaint of cough and wasting; the signs of fibrosis at the left apex were more marked, and there was slight clubbing of the finger-tips. While in hospital he coughed little, and no sputum could be collected; the temperature was irregular, rising occasionally to 99°–100° F. On January the 12th, 1909, he was brought to the hospital again, with a history of cough and general illness for one week. No sputum has been obtained since he has been in hospital. The X-ray examination shows general opacity of the upper part of the left lung, the heart is drawn over to the left, the diaphragm is low and moves poorly on both sides. The chief point of interest about this case is that on admission it showed Grocco's paravertebral triangle of dulness on the right side behind.

The CHAIRMAN asked the opinions of members on the value of Grocco's triangular dulness. He believed the sign to be present in this case, and wished to hear as to its value and constancy in the conditions in which it was said to be present. Some had said it was present in every child, whether healthy or diseased.

Dr. W. EWART said that in his hands Grocco's sign had been very valuable, and, with certain precautions, quite reliable as a sign of fluid. Triangular dulness might occur in any part of the body, owing to triangular consolidation in connection with fluid, but that was not the point. The question was, How could one tell whether that sign was such as Grocco

described, or was due to the accidental presence at that spot of a source of dulness? It was essential to associate with it the crucial test and the counter-test. A triangular-shaped dulness having been found in the position described, then by shifting the position of the patient, the fluid being free, its shape should be modified. If the vertical position of the body was restored, the original dulness ought to return. The counter-test was the ability to bring back the sign by altered posture. He would be glad to hear from Dr. Blake whether in this case any alteration of the dulness took place. His own experience was that empyemata did not give that sign in the same way. Grocco's sign would be found when the fluid was in the peritoneal cavity, and in all cases where the fluid raised the diaphragm. In shape it was a big equilateral triangle bisected by the spine.

A paper on **Infant Mortality as seen in a Children's Hospital** was read by Dr. DAVID FORSYTH. An exact pathological knowledge of the causes of infant deaths was of the greatest practical importance from the point of view of prevention. Hitherto our principal guide in this matter has been the official returns of the Registrar-General, which show the relative importance of various diseases in this connection. These returns, however, are in some cases difficult to harmonise with the experience in the wards and post-mortem room of a children's hospital. Conditions which are known to be frequent causes of death in hospital practice occupy only a relatively insignificant place in the official returns, while others which are officially important are in practice unimportant. With the object of obtaining statistics based on accurate death-certification, Dr. Forsyth had examined the death records of the Evelina Hospital for Sick Children from January the 1st, 1885, to December the 31st, 1906, and had analysed the causes of 1202 consecutive infant deaths under one year. The numbers in this series were as follows:

Acute lung diseases	254	Mastoid disease	32
Diarrhœa	188	Meningitis (non-tuber- culous)	26
Whooping-cough	135	Rickets	13
Tubercle	128	Convulsions	13
Marasmus	78	All other diseases	127
Congenital defects	75		
Syphilis	55		
Septic conditions	44		
Intussusception	34	Total	1202

The method adopted in tabulating these cases was explained, and reasons were given to show that a comparison with the returns for England and Wales was permissible. For reasons specified the three items, prematurity, measles, and whooping-cough, were excluded from the comparison. Under the remaining headings the mortality in the official and in the Evelina Hospital returns stood thus in percentages:

	Evelina Hospital.	England and Wales.
Acute lung diseases	23·8	21·4
Diarrhœa	17·6	23·2
Tubercle	12·0	5·1
Marasmus	7·3	16·3
Congenital defects	7·0	6·3
Syphilis	5·2	1·3
Septic conditions	4·1	—
Intussusception	3·2	—

	Evelina Hospital. England and Wales.	
Mastoid disease	3·0	—
Meningitis (non-tuberculous)	2·4	2·0
Rickets	1·2	0·58
Convulsions	1·2	12·2
Injury at Birth	—	0·76
Starvation	—	0·7
Other causes	12·0	10·16
Total	100·0	100·0

While a fairly close correspondence exists between the two series, many striking differences must be noticed. Acute lung trouble and congenital defects show no great divergences. With diarrhœa the somewhat smaller figure that represents the Evelina Hospital mortality is accounted for by two facts. In the summer, when diarrhœa is rampant, the accommodation in children's hospitals is overtaxed, and even moribund cases may be sent away. Second, it is probable that some of the deaths in the official returns which have been ascribed to diarrhœa would have been registered under other headings if facilities for post-mortem examination were as great in general practice as in hospitals. With regard to marasmus, a difference of more than 100 per cent. exists between the two series of figures. Since the official returns represent over 15,000 dead infants its interpretation possesses wide practical importance. Marasmus is a term of vague significance, and is often employed in connection with diseases of which it is merely a symptom, especially with syphilis, improper feeding and tubercle. It cannot be doubted that deaths from these causes are sometimes registered as due to marasmus, and that a proportion of them should be distributed under other headings. These criticisms apply even more forcibly to deaths from "convulsions," the official returns for which are no less than 1000 per cent. of the Evelina figures and represent 11,000 deaths. The term "convulsions" under no circumstances represents more than a symptom, and when employed as a cause of death merely hides under a meaningless designation important fatal conditions, the returns for which are unduly minimised.

* With regard to syphilis, this disease was held responsible in 1905 for only 1200 infant deaths in the whole of England and Wales—little more than three a day. In the same year, however, 19,000 infants under two months are stated to have died from prematurity. Probably this large figure included the deaths of numbers of syphilitic infants. As a matter of fact, the deaths in 1905 from syphilis of infants under three months amounted only to 300 according to the official returns. Other deaths from this cause must be looked for under the heading "marasmus." With regard to rickets, the hospital figures are twice those for England and Wales. Here we must remember that cases of rickets are often fatal from broncho-pneumonia or diarrhœa, and the primary condition is likely to be overlooked.

After referring to acute mastoid disease as a cause of infant mortality, Dr. Forsyth passed to the question of tubercle. The Evelina Hospital figures included only those cases in which tubercle was the actual cause of death, and excluded all in which, though a tuberculous lesion was found post-mortem, death resulted from some other cause. The difference in the two series was probably to be explained by the tendency of tuberculous disease in infants to simulate other non-tuberculous affections. Probably the hospital figure, 12 per cent., more nearly represents the real mortality

than the official figure, 5 per cent. The frequency, however, with which life is destroyed by tuberculous infections incurred during infancy is underestimated even by this larger number, because many such cases do not die until their second year, and their deaths do not come into the infant mortality returns. The full importance of tubercle as a factor in infant life would be better revealed by statistics dealing with deaths up to fifteen or even eighteen months. At the Evelina Hospital fifty children died of tubercle between these ages. Many, if not most of them, must have been infected during their first year.

In conclusion, Dr. Forsyth expressed the hope that these Evelina Hospital statistics would lead to the preparation of corresponding figures from the records of other children's hospitals. An accurate knowledge of the causes of infant mortality can be best obtained from those institutions in which special opportunities exist for ascertaining the exact causes of infant deaths. If, further, the absolute numbers in each series are published, we shall be in a position to draw valuable conclusions based on many thousands of cases. At present 20 per cent. of the mortality, representing 25,000 deaths, is attributed to vague symptoms. When the community has set a proper value on infant life such terms as "convulsions" and "wasting" will no longer be accepted for death registration. If no more satisfactory explanation of the cause of death is forthcoming further steps will be insisted on, as is done to-day with adult deaths. By this means a far-reaching and practical measure will be taken to diminish the present excessive waste of infant life.

The CHAIRMAN said the Section was much indebted to Dr. Forsyth for his careful paper, and he hoped the subject would be reverted to on another occasion. As the author said, accuracy was much more likely in a children's hospital than outside. One feature which showed considerable inaccuracy was that the number of deaths attributed to starvation was greater than those due to rickets, which seemed absurd. They well knew what a deadly disease rickets, with its complications, was, yet the deaths from it were put under the heading of the terminal trouble, whatever it might be.

Dr. DUDFIELD regretted he had been unable to see beforehand a copy of the paper, and it had been impossible to take any notes owing to the epidiascope demonstration. Dr. Forsyth had shown a classification of deaths on a strictly scientific principle. However much one might value the Registrar-General's returns—and they were of great value—they could not be called a scientific classification. He said that because the returns sent in were very curious things, and often one did not quite know what to make of them. The rule of the Registrar-General—which partly accounted for the discrepancies shown on the screen—was that if the duration of the diseases was mentioned, that of the longest duration was to be recorded as the cause of death; if no duration was mentioned, it must be tabulated under the first disease on the list. Frequently one found syncope as the first disease in a case of diabetes, and whooping-cough the second and third. Therefore, not only discretion but imagination had to be exercised as to the actual cause of death. In the case of broncho-pneumonia and whooping-cough, the rule was to select for registration the whooping-cough, which, of course, preceded the broncho-pneumonia. Even in the case of tubercle and whooping-cough, the Registrar-General selected the specific zymotic disease. Marasmus was a hopeless disease in that respect, yet it was a very favourite term with the profession. The paper dealt with the scientific classification of diseases against rule-of-thumb. It was true that mastoid disease did not

appear in the tables of infant mortality, but further on in the tables mastoid disease was tabulated separately.

Dr. R. HUTCHISON said that to him the most surprising point about the figures given by Dr. Forsyth was the one for mastoid disease. He did not know what the figure for that at Great Ormond Street Hospital was, but he would be surprised if the mortality from it was anything like 2 per cent. or 3 per cent. There must be some explanation for that figure at the Evelina. It might be due to the large amount of whooping-cough treated at the Evelina.

Dr. MEREDITH RICHARDS said he thought it a mistake to suppose that because a high death-rate from mastoid disease was found at the Evelina, that in the general statistics should be different. Most such cases went to the hospital because the surgical conditions were such as to need treatment. The same remark was applicable to marasmus. Surely a large proportion of marasmic children were admitted to hospital, where they had proper treatment and recovered, but the case was different in other parts of the town, because if not admitted to hospital possibly the child died from terminal diarrhoea. In tubercle also there was a large amount of selection. If a child showed symptoms of meningitis or general tuberculosis, time after time one advised the parents to take it to a general hospital. If it died there, the death would be put down to general tuberculosis. Therefore it was necessary to take precautions when comparing hospital figures with those gleaned from the community in general.

Dr. W. EWART said the paper brought home forcibly the importance of commencing, at this stage of medical science, a registration of morbidity to show the fatality of various conditions. Tubercle was very common, yet was comparatively seldom diagnosed, because it was often latent. A post-mortem basis seemed the only reliable scientific one. Of recent years medicine and surgery had made immense strides, so that many diseases formerly regarded as incurable were now cured. So that the difference in statistics from a hospital and those gleaned from sources remote from hospitals and the best aid was an index of the progress of medical science. If only all cases could be seen early and treated by the best methods the aim of the profession would be much more largely fulfilled.

Dr. E. CAUTLEY congratulated the author on his energy in regard to the paper, but thought it was largely misspent, because the conditions of hospital practice were so different from those in everyday life. Moreover, the conditions in different hospitals varied. Some hospitals admitted many children under two years of age, others admitted only a limited number, others again none. Yet 75 per cent. of the deaths among children occurred under two years of age. The paper would have been more valuable if the ages of the cases, or at least the mean age, had been given.

Dr. FORSYTH, in reply, said it was from the scientific aspect that he regarded the figures. The methods adopted in tabulating death registration were different from those in a hospital. He understood from Dr. Dudfield that if a child died from septic meningitis or mastoid disease twelve months after having suffered from scarlet fever, the death was attributed to scarlet fever. That was misleading. Another point was, that his statistics were taken over a period of twenty-three years. Twenty-three years ago the death-rate from mastoid disease was probably much higher than now, and no doubt now it was less than 3 per cent. He had tried to show that a diagnosis on clinical data was not always a true one; post-mortem examinations gave the most accurate figures.

Philadelphia Pediatric Society.

JANUARY the 12th, 1909, J. P. CROZER GRIFFITH, M.D., President.

Bromide Eruption.—Dr. FRANK CROZER KNOWLES read a paper on "Unusual Cases of Bromide Eruption in Childhood," based on thirty-seven cases, with four more cases illustrating unusual types of eruption. None of the forty-one cases were of the common acne type, only those with unusual features being considered. In five cases the eruption had been produced in the infant by bromine transmitted through the mother's milk, the baby having received no medication. The subject was discussed under aetiology, dose of the drug, and length of time required to produce the eruption, constitutional involvement, transmission through the mother's milk, various forms and distribution of the eruption, duration of outbreak, sequelæ, pathology, prophylaxis, and treatment. Fifty references were included in the paper.

Dr. GRIFFITH said that although there was no question among authorities as to the transmission of iodine through the mother's milk, the statements with regard to bromine were decidedly at variance. The collection of cases made by Dr. Knowles this evening seemed to settle the matter beyond doubt.

Dr. KNOWLES referred to a case in an adult, recently reported by Pasini, in which the ingestion of bromide had been followed by enlargement of the thyroid. This was due, according to Pasini, to the fact that the thyroid gland normally contains bromine and iodine and has a great affinity for these elements.

Subcutaneous Emphysema Complicating Pneumonia.—Dr. CHARLES A. FIFE reported this case.

Dr. J. CLAXTON GITTINGS recalled seeing a case of subcutaneous emphysema in a boy. It had developed on the right side of the neck, extending from the angle of the jaw to the clavicle, four days after operation by Dr. Fötterolf for removal of adenoids. It persisted for eight days, and was accompanied by moderate fever and evidence of systemic intoxication. Circumstances prevented bacterial examination, but the comparatively short and mild course would practically exclude the agency of the *Bacillus aerogenes capsulatus*. Several other varieties of bacteria have been proved to be gas producers, however, notably some of the colon group. The short time which elapsed between the operation and the development of emphysema in Dr. Fife's case would make it difficult to exclude the throat as a possible portal of entry for an infection with a gas producing organism.

Dr. GRIFFITH said that he had seen a number of cases of subcutaneous emphysema, the first being one which followed sloughing of a tonsil in the course of a severe scarlet fever. Here the emphysema started in the neck and spread gradually down to the upper part of the chest.

Dr. FIFE added that Dr. Fötterolf had spoken to him of subcutaneous emphysema occurring after the removal of adenoids; but this does not occur frequently nowadays.

Pneumothorax Complicating Pneumonia.—Drs. CHARLES H. WEBER and C. Y. WHITE reported a case in a child, aged $3\frac{1}{2}$ years. Pneumothorax occurred on the eighth day of the disease, without any paroxysm of coughing or other unusual respiratory effort. At autopsy the perforation was found near the lower border of the upper lobe of the left lung. At the point of perforation the lung was covered with a recent fibrinous exudate and the tissue surrounding was consolidated with a pneumonic infiltration. Attention was called to the rarity of the condition in children and especially in pneumonia.

Dr. ALFRED HAND, jun., saw this case before death and witnessed the autopsy, which cleared up for him a puzzling case of empyema he had seen some years ago. In that case the heart was greatly displaced, and the child died very suddenly after taking a drink of water several days after the empyema had been operated upon. The act of swallowing may have produced an instant pneumothorax, followed by death soon afterward.

Dr. WEBER said that in the four cases of pneumothorax in children mentioned by him, due to tuberculosis, there had been rupture of emphysematous vesicles; while in tubercular adults in whom pneumothorax occurred, it followed as the result of cavities breaking down and opening into the pleural cavity.

Dr. GRIFFITH then delivered the Annual Address.

The PRESIDENT reviewed the history of the Society during the twelve years of its existence. There had been 242 cases or specimens shown and 341 papers read at the meetings. The range of subjects had been wide. While most of the papers had dwelt upon matters of internal medicine as applied to children, there had also been special contributions on general surgery, orthopaedics, dermatology, neurology, and diseases of the eye, ear, nose, and throat. Unusual clinical advantages arose from the addresses presented by eminent pediatricists from other cities, and the symposiums in which members of the Society and others had taken part had also been of value. These had been on "Heart Disease in Children," "Vaccination," "Milk as an Infant Food," and "Rheumatism in Infancy and Childhood."

The object of the Society had always been to make its meetings a place where not only elaborate studies could be reported, but where members could exhibit or detail the symptoms of especially interesting cases without feeling that these reports must be published in any special way, if indeed published at all. The programmes had been interesting, and the proceedings are now reported in one American and one foreign journal for diseases of children.

Perhaps the most important work of the Society had been the establishment of the Milk Commission. It had been the first Commission with high requirements, yet offering certification to any dairy willing and able to come up to these. The plan had worked well although the standard was high, and the influence upon the milk supply of Philadelphia in general has certainly been very great.

The interests of the Society are being maintained and the membership as well. The average attendance during the year 1908 had been the best during the Society's existence.

Société de Pédiatrie, Paris.

November the 15th, 1908.

On the Use of Mercurial Salts in the Treatment of Syphilis in the Child.—CHAS. LÉROUX preferred injections of benzoate of mercury in rapidly increasing doses, which he found well tolerated and very active. Children also bear injections of grey oil well, but they have the disadvantage of leaving a nodule of induration, and with insoluble salts the exact dose of mercury absorbed cannot be estimated. The author therefore preferred soluble salts, and reserved the administration of grey oil for children who could not attend daily at the hospital. If symptoms of intolerance occurred the injections were temporarily suspended and then resumed in a modified dose. As to the duration of the treatment, he found the period of four years usually advocated to be insufficient and continued it some time longer.

M. GILLET used Quinquaud's calomel paste applied on strips, which are left in position eight days and then renewed. The only incident he had observed during a period of eighteen years was a slight dermatitis, which yielded rapidly to the usual remedies.

Pure Mitral Stenosis.—MERY and PARTURIER showed a child with an enlarged heart. On auscultation a loud pre-systolic bruit and reduplication of the second sound was heard; there was also a præcordial thrill. The child, who was ill-developed and puny, had had no illness but an ordinary bronchitis. There was no sign of mitral insufficiency.

M. RICHARDIÈRE said he had seen a similar condition of pure mitral stenosis in a child who had had chorea last year.

Obstinate Vomiting: Aërophagy.—Drs. MERY and GUILLEMOT read notes of a case of a breast-fed infant who, during the preceding three months, had developed normally, but by degrees the weight curve became horizontal and he became subject to attacks of cyanosis of the hands and feet. When put to the breast the movements of swallowing were accompanied by a kind of gurgling sound, then vomiting supervened and became obstinate. This condition lasted three months without affecting the general health or sensibly lowering the weight. Sterilised milk, citrate of soda and kephyr were given without effect. The vomiting was accompanied by spasmodic manifestations, cries of pain, contraction of the limbs, distension of the stomach and retraction of the rest of the abdomen. On radioscopic examination the momentary arrest of the milk at the cardiac end of the œsophagus could be easily seen, followed by a rapid entry into the stomach, indicating spasm of the cardiac extremity. The stomach was distended with gas. Thickened broths were given and well borne, the child taking fourteen small feeds every twenty-four hours. All other liquid food was stopped. Several saline injections were given, but had to be suspended on account of the occurrence of œdema due to retention of chlorides. Owing to this semi-solid régime and the administration of valerianates and belladonna, the weight-curve began to mount regularly. On too sudden a return to liquid food the vomiting returned, and again ceased on giving a drier diet.

Dr. LESAGE insisted on the necessity of examining by X rays all infants who vomited, as in this way spasmodic affections accompanied by crying, vomiting or eructation could be diagnosed.

Dr. MARFAN asked if the gas in the stomach was not caused by fermentation of milk and not from the external air?

Laryngeal Stridor of Thymic Origin.—Dr. GUINON showed the larynx of a child in whom inspiratory stridor began to show itself at the age of six months and gradually became intense, eventually causing death. At the autopsy a bulky thymus surrounded three quarters of the trachea, causing symptoms of compression. The author had been able to reproduce in several infants a similar characteristic stridor by compressing the trachea with the finger.

VINCENT DICKINSON.

Abstracts from Current Literature.

Medicine.

Orthostatic albuminuria (*Med. Press,* May 6, 13, 20, 1908).—At the Gesellschaft der Aertze of Vienna **Stejskal**, in a paper on orthostatic albuminuria, stated that 77 per cent. of cases occurred among the young. The condition is associated with weariness, headache, vertigo, fainting, noises in the ears, palpitations, pain in the back. Dyspnoea and constipation are frequent; the skin is usually pale and the muscles are flaccid; the area of cardiac dullness is increased, a systolic murmur is present, and the second pulmonary (and more rarely the second aortic) sound is accentuated. After the upright position has been assumed for a short time the urine is found to contain albumin that is deposited by acetic acid, but no other nephritic deposit is present. The condition usually persists from two to seventeen years, and is more frequent among young persons than is commonly believed. With regard to the aetiology some authors attribute it to a suppressed or antecedent nephritis; others, such as Leube, to a congenital anatomical abnormality; while others, again, consider it to be due to a constitutional enfeeblement or to an insufficient innervation of the heart and blood-vessels. More recently Jehle has propounded the theory that the cause is to be found in a deformity of the spine, such as an increased lordosis in the lumbar region, which in the upright position presses on the kidney and thus produces albuminuria. **Stejskal**, while admitting that many facts seem to favour this theory, inclines, however, to the belief that nephritis, puberty, or nervous disturbance is more likely to be the determining factor. **Chvostek** was of opinion that this form of albuminuria is nephritic in origin, though it does not pass on to the severer changes and final destruction. **Loeb** attributed the condition to a particular loss of the co-efficient in the cardiac impulse, which leads to a state of decompensation, and produces a functional disturbance in the veins leading to this form of albuminuria. **Pelnack** thought that it depended on the nervous system, producing a congestion in the venous circulation of the kidney in the upright position, which may be due to an abnormal change in the motor supply, admitting an overflow into the splanchnic region, and thus producing a distension of the renal vessels. In this way oliguria is produced, and it is possible that the orthostatic position may also injure the filtering power of

the kidney. It is observed that this morbid state appears during the lengthening of the long bones and disappears at puberty, and that it is frequently associated with chlorosis and morbid conditions of the genital glands. A similar disturbance also occurs at the climacteric period, which is only another disturbance of the vascular system. A congested state of the supra-renal bodies may be a further source of trouble to the nervous supply of the kidneys. **Strasser** said that he had found by experiment that the renal reflex was more sensitive than that in any other organ in the body; therefore, two causes for the albuminuria may be found, viz. ischæmia and stasis. A simple hyperæmia is not sufficient of itself to produce albuminuria, but if a loss of tonus be associated with it in the renal vessels albuminuria is established. Innervation, therefore, may accompany the congestion. **Kapsammer** believed that a form of nephritis was the real cause of the albuminuria. Orthostatic albumin is only a symptom, and not a disease *sui generis*, separate from nephritis, and is due to what may be termed an inferior condition of the kidneys, which may have its origin in a purely mechanical irritation or a nervous reflex condition. In any case it cannot be separated from nephritis. **Novak** had obtained the albumin, not only when standing, but in other positions, such as suspending the body, raising the legs and twisting the arms in different directions. Compressing the thorax and bandaging the limbs had the same effect. He suggested that a twisting of the ureters or other pressure on the vessels might tend to the same result. As to the lordosis being the true cause he thought that the anatomy of the kidney was against it. In some of his cases no lordosis existed. A distinction had been drawn between passive and active lordosis in the production of the albumin. The former was when the spinal muscles were feeble and lax; the latter was the opposite condition when albumin was present. In his own experiments, however, he had been unable to satisfy himself of this distinction.

T. R. WHIPHAM.

Kernig's sign (*Gazz. degli Osped.*, No. 20, 1908).—**Salmoni** has made observations on Kernig's sign in all cases of disease of the spinal column that have occurred in his practice during the last two years. In all there were twelve cases, of which nine were suffering from Pott's disease or caries and three from rheumatoid arthritis. In six of the twelve Kernig's sign was definitely present. Salmoni, therefore, concludes that this sign is not diagnostic of meningitis, but rather of rigidity of the spinal column. In a few cases it may be due to a loss of elasticity in the muscles.

T. R. WHIPHAM.

Gangrene of the skin in rheumatoid scarlatina (*Med. Press.*, September 30, 1908).—**Heubner** describes a remarkable case. A girl, whose age is not stated, had what was apparently an attack of scarlatina commencing on December 21, 1907. Desquamation occurred in January, and on the 7th of that month the child again became feverish with marked swelling of the cervical glands, but no nephritis. Three days later articular pains began in the knee, elbows, fingers and wrists, accompanied by a redness and swelling of the skin in various places, first on the right elbow, then on the back of the right hand, on the buttocks and on the internal surfaces of both malleoli, the eruption appearing at spots where the joints were simultaneously affected with pains. By January 17 the skin over the elbow and hand of the size of a four-shilling piece had become discoloured and black, with a red line of demarcation around, which followed a condition of vesicu-

lation. No fungous growth was found in the epidermis. By February 2 the gangrenous areas had separated and the wounds subsequently granulated up. The writer has been unable to find an analogous case. The gangrene was superficial and not embolic, neither was it pressure gangrene. The condition is attributed to a vaso-motor disturbance of the skin. No bacteria were found in the blisters or in other parts of the dead skin.

T. R. WHIPHAM.

Stenosis of the pylorus in infancy; four cases successfully operated upon (*Canad. Pract. and Rev.*, August, 1908).—**Scudder** states that in a normal infant the pylorus may be difficult to recognise, but in a baby with stenosis it is never hard to locate. The symptoms of obstruction commence early. After three or four days the child loses its appetite and begins to vomit, changes in the method of feeding causing no improvement. Pain occurs after feeding, but is relieved by vomiting. Constipation is the rule; the fæces are like meconium, and consist of epithelial *débris*, intestinal secretions, and altered bile and blood. The tongue is clean, the temperature subnormal, and there is a steady loss of weight. From the beginning visible peristalsis in the stomach can be observed. Cases of functional disturbance of the stomach resembling pyloric stenosis are very common in infants, but in these cases the vomiting is less regular and may cease for long periods, and is more of a regurgitation than an expulsion. The stools are green and slimy, and there may be constipation or diarrhoea; the wasting is slow, and the pylorus is not palpable. Operative treatment, in the author's opinion, is the only one that can be of use, and posterior gastro-enterostomy gives the best results. Loreta's operation is dangerous, and both this and pyloroplasty give unsatisfactory results. The writer reports four successful operations of posterior gastro-enterostomy on infants 14, 22, 24 and 25 days old. The operations were performed from six months to three years ago, and all the children are in good health at present.

T. R. WHIPHAM.

Pyarthrosis of the knee in an infant (*Journ de Med. de Bordeaux*, August, 1908).—**Venot** reports the case of an infant, born healthy, who, three weeks after birth, showed a paralysis of the right leg due to disease of the knee, which on examination was found to be full of fluid. There was no pain or rise of temperature. Thick pus was drawn from the joint, and it was washed out with oxygenated boracic solution. The swelling rapidly went down and the limb assumed a normal appearance. The cause was obscure; the day after birth there was a slight conjunctivitis, which disappeared after twenty-four hours, and this seemed the only possible cause, as there was no umbilical suppuration, skin eruption, or intestinal trouble.

J. PORTER PARKINSON.

Alcoholic intoxication in an infant (*l'Echo Med. du Nord*, June, 1908).—**Paucot** relates the case of an infant, born healthy, which began to vomit at the end of the first month; this continued, and there was an irregular loss of weight. The infant was breast-fed, and there did not seem to be any ordinary indigestion. It became constipated and restless at night, refused the breast and got visibly thinner. It was then discovered that the mother was in the habit of drinking to excess beer and cognac. The infant was then put upon cow's milk and at once began to increase in weight in an extraordinary way. The case is worthy of record, as the mother was never obviously the worse for drink, and in every respect seemed to lead a regular, well-ordered life.

J. PORTER PARKINSON.

Supra-renal tumour of the ovary (*l'Echo Med. du Nord*, July, 1908).—**Gaudier**.—A little girl, aged 4 years, had an abdominal tumour the size of a large orange. It had been noticed for three or four months, and had the characters of an ovarian tumour. The child had long hair, remarkably developed breasts, and large labia minora. The tumour was removed; it was ovoid, and on one part the ovary could be recognised. On cutting, fibrous tissue was seen dividing it into masses. In this is a finer network filled with polyhedral cells, containing fat in the meshes of reticular protoplasm. These cells run chiefly in columns separated by veins, and they resemble in a striking way uriniferous tubules. The whole tumour was composed of the same tissue, and was obviously a hypertrophied accessory supra-renal situated in the ovary. **Marchetti** and **Ulrich** have described similar cases.

J. PORTER PARKINSON.

Untoward effects of diphtheria antitoxin (*South Calif. Pract.*, July, 1908).—**Thomas** relates the case of a boy, aged 15 years, suffering from diphtheria, who was given an injection of 4000 units of antitoxin. He at once became anxious-looking and livid, gasped for breath, and said he was being smothered, froth poured from his mouth, and he clutched at his throat. The pupils became dilated and universal convulsions appeared; he then became unconscious and collapsed, the pulse disappearing from both wrists. Strychnine and atropine were at once injected hypodermically, and hot coffee into the rectum. As the patient did not revive, an hour and a half later 3000 more units of antitoxin were injected, and more strychnine with digitalis; an hour later these injections were repeated, and again eleven hours afterwards. The radial pulse remained absent for six hours, but returned after the third injection of antitoxin. The patient gradually recovered, large masses of false membrane being expelled from the throat, and on the ninth day a strip of membrane was passed from the anus.

J. PORTER PARKINSON.

Serum treatment of cerebro-spinal meningitis (*Canadian Pract. and Rev.*, August, 1908).—**Baines** discusses the value of Flexner's serum in this disease. It was first tried on monkeys, and was found curative and in no case harmful. It is mildly antitoxic and decidedly bacteriolytic, and is administered by injection into the cerebro-spinal canal. The usual mortality of this disease is 80 per cent., but in cases treated by the serum is but 30 per cent. or under. The amelioration of the symptoms after injection is remarkable; the temperature drops within forty-eight hours, the pain, hyperæsthesia and coma disappear, and the child takes food. Retraction of the head is the last symptom to disappear. The whole course of the disease is shortened to a week or ten days in many instances. After injection there is noticed in the cerebro-spinal fluid a lessening of the number of meningococci, and later they become swollen, indistinct, and refuse to grow in cultures. They finally disappear altogether. An injection of 20 to 30 c.c. should be given daily for three or four days, or until symptoms are improved. The leucocytes at the outset show 30,000, but within four or five days fall to 12,000, with an increase of polynuclear leucocytes.

J. PORTER PARKINSON.

Hepatic cirrhosis in infancy (*La Pediatria*, May, 1908, p. 337).—**A. Oliari** publishes two cases and gives an extensive bibliography of the subject. Case 1, a female, aged 28 months; father had had syphilis and had

been in a lunatic asylum, mother had had two abortions. The patient was born at term normally and was breast fed till a year old. At that time she had measles and bronchitis. For some months enlargement of the belly had been noticed with deterioration of health, so that some days before admission she could neither walk nor stand. Bowels irregular, often diarrhoea and vomiting recurred. Patient was pale and thin, skin sub-icteric. Abdomen very large and lobular, with umbilical hernia, integument stretched; the maximum circumference was 58 cm., superficial veins enlarged. Ascites was present and the liver enlarged; spleen slightly enlarged. The case also presented a maculo-papular eruption which lasted fifteen days, and traces of albumin and bile-pigment in the urine. Repeated paracentesis drew off 400 to 4000 c.c. of sanguino-serous fluid. The autopsy showed an enlarged liver with mixed cirrhosis of syphilitic origin. Case 2, a male, aged 2 years; father alcoholic, paternal grandparents died from cancer. Mixed feeding with maternal and cow's milk up to five months, then pap food. From the first months of life was accustomed to drink wine in fair quantities and sometimes also liqueurs. Stools always irregular with frequent diarrhoea. When eighteen months old the belly began to enlarge and continued until the child could no longer support himself. Patient was thin, skin sub-icteric. Enlarged glands in neck and groins. Abdomen large, 60 cm. in circumference; distended superficial veins. Liver greatly enlarged, spleen slightly so. Urine free from albumin and sugar, but a fair amount of indican and urobilin. A rigorous milk diet resulted in a cure, and eighteen months later he seemed in good health, the liver and spleen being normal in size. Case 3, a female, aged 5 years, was a case of atrophic cirrhosis with interorbital pancreatitis which proved fatal. Case 4, a female, aged 5 years, of arthritic parents, was a case of Hanot's hypertrophic cirrhosis. A review of the whole subject and a copious bibliography are added.

VINCENT DICKINSON.

Intubation for croup in nurslings (*'La Pediatria,' February, 1908, p. 82*).—A. Montefusco states that intubation performed in infants at the breast does not present any special technical difficulty and does not prevent natural suckling. The high mortality noticed in these cases is not the direct result of the intubation, but is due to the feebler resistance that the infants' organism offers to the diphtheritic infection and to the greater frequency at this age to broncho-pneumonic complications. Since the mortality is still higher in nurslings who have been tracheotomised, there is no justification for the preference for tracheotomy over intubation. To avoid the possibility of injurious pressure of the laryngeal tube on the tissues, a somewhat smaller tube than given in O'Dwyer's series should be used for infants under one year.

VINCENT DICKINSON.

Spasm of the anus as a cause of crying in nurslings (*'La Presse Médicale,' March, 1908, No. 26, p. 205*).—At the National Society of Medicine at Lyons, Weill and Planchu related the case of an infant whose violent, repeated, and constant crying prevented sleep and could not be explained by any physiological disorder; the infant did not vomit, passed normal stools, and was taking thirty grammes of nourishment a day. Nevertheless he continually cried both during feeding and in the intervals both day and night, and only slept two hours out of the twenty-four. The crying, which lasted several days, was immediately calmed by the introduction of the finger in the anus, which was in a condition of spasm, and did

not occur again. Planchu tried the same method on several other crying children with equally satisfactory results, the nurses being so impressed by them that they set to work to quiet all the children by dilating the anus to such an extent that Planchu was obliged to forbid the practice, except in cases where he himself found an indication for it, which happened but rarely.

VINCENT DICKINSON.

Subacute pneumococcal infection with renal localisation (*La Clin. Infant.*, May, 1908, p. 263).—**Ferrand** and **D'Halluin** communicated this case to the Soc. de Pédiat., at Paris. The child, aged 6 years, was admitted into hospital with signs of acute nephritis and anasarca. The next day symptoms of pleurisy were noticed. Exploratory puncture gave exit to a sero-fibrinous fluid containing a large number of polynuclears and pneumococci. The following day crepitant râles were heard over a limited area of the lung. Death occurred the night after. At the autopsy sero-fibrinous fluid in the pleura, pericardium and peritoneum, red hepatisation of the lung, pneumococci in the spleen, kidney and lung.

VINCENT DICKINSON.

Scarlet fever in Lyons (*Thèses de Lyon*, 1906-1907, No. 76).—**J. Truffinet**.—This thesis is a statistical study in scarlet fever at Lyons from 1901-1905. The disease has been present in the town for several years, its persistence coinciding with the multiplication of methods of transport and the erection of new schools. The dwellings of the poor constitute the chief foci for the dissemination of the disease. The morbidity remains stationary, while the mortality has diminished. Scarlet fever is most prevalent in May, and diminishes gradually during the following months. In November there is a recrudescence which lasts until January, when there is another diminution followed by a gradual rise in March. The rise in March and again in November corresponds to the time of year when there are most winds and when the variations in temperature and pressure are most evident. From June to October, not only do these variations no longer exist but the schools are closed. On their re-opening the morbidity rises rapidly. In 1891 the case mortality was 24.09 per cent., in 1901 4.54 per cent., and in 1903, when the morbidity was highest, only 2.02 per cent. Females are more susceptible to scarlet fever than males, but as boys attend school before girls the morbidity of the former is greater between the ages of three and five years. During their military service the morbidity is again greater among males owing to their aggregation in barracks. The disease is most prevalent in children between the ages of five and ten years. Out of 1284 patients 660 were of this age. Only 17 cases occurred during the first year of life, and only 9 were over forty years.

J. D. ROLLESTON.

A case of lymphangiectasis (*Pediatrics*, April, 1908, p. 248).—**H. Heiman**.—A baby, aged 8 months, who had had a retro-pharyngeal abscess five months before, showed a swelling over the left clavicle. There was no fever, but the child was restless and fretful. Diagnosis was made by aspiration, on which some glairy and coagulated fluid was removed.

J. D. ROLLESTON.

Congenital malformation of the œsophagus (*Arch. of Pediat.*, vol. xxv, 1908, p. 267).—**J. Phillips**.—This condition is comparatively rare. Only seventy-five cases have been recorded. It is usually associated with

some other deformity, *e. g.* horse-shoe kidney, as in the present case, spina bifida, imperforate anus or malformation of the genitals. The cases are invariably fatal, the average duration of life being four to five days. The longest time recorded is twelve days. The symptoms are typical. The child may appear normal, but cannot swallow. Attempts to feed it produce attacks of suffocation followed by regurgitation through the mouth and nostrils. A catheter passed down the pharynx will reveal the site of the obstruction. Meconium will be passed for the first two or three days, after which no motion is passed. Death takes place from exhaustion. In the present case the pharynx ended blindly 5 cm. below the base of the epiglottis, and became continuous with a thin mass of homogeneous fibrous tissue 5 cm. long which joined the blind cardiac end of the œsophagus. Death took place on the ninth day. For the pathology of the condition reference is made to Dickie's paper in the *BRITISH JOURNAL OF CHILDREN'S DISEASES*, 1906, p. 451.

J. D. ROLLESTON.

Articular rheumatism in an infant (*'Arch. of Pediat.,'* April, 1908, p. 265).—**J. P. Crozer Griffith.**—Acute articular rheumatism in infancy is rare. In 1899 Miller found only nineteen undoubted cases in literature. The present case was the child of healthy parents free from rheumatism or syphilis. For the first nine weeks he was breast fed, and then was placed on a modified milk diet. When eight months old he developed fever and signs of inflammation in the right ankle and right hand. One and a half grains of sodium salicylate every three hours were given, and improvement took place. Two relapses followed, the right hip also becoming involved. Complete recovery took place, and the heart was not affected. To exclude the possibility of scurvy orange juice was given, but no benefit resulted.

J. D. ROLLESTON.

Treatment of tuberculous glands by X rays (*'Brit. Journ. of Tuberculosis,'* April, 1908, p. 120).—**A. Howard Pirie** records five cases successfully treated by this method, the rationale of which is that the giant-cells, which usually contain tubercle bacilli, are very easily killed by X rays. The bacilli are thus set free, and the leucocytes can attack and destroy them. Administration of the proper dose of X rays is most important, since too small a dose will stimulate the giant-cells to multiply and too large a dose will kill the leucocytes. The proper dose which stimulates the leucocytes while it kills the giant-cells is determined by the fact that such a dose causes overgrowth of the lanugo hairs of the face and neck, whereas a stronger dose causes them to fall out. Treatment, which is best started when the glands are growing larger, must be continued for at least three to six months until the glands no longer project on the surface. Each week a third of the dose is given which would produce epilation of the scalp.

J. D. ROLLESTON.

Erysipelas in the newly born (*'Revue med. de l'Est,'* 1908, p. 321; and *'Ann. de Gyn. et d'Obstét.,'* 1908, p. 288).—**M. A. Herrgott.**—Erysipelas in the newly born is a very rare and fatal disease. Herrgott, professor of midwifery at Nancy, has only seen two cases. The first was in 1872, in a prematurely-born child. The disease started on the eighth day at the umbilicus, and spread over the lower part of the body. Death occurred nine days later. Purulent peritonitis was found at the autopsy. The second case was in 1907 in a full-term child. When it was eight days old

the mother developed lymphangitis of the breast. Two days later, when she had recovered, erysipelas developed on the vulva of the child, and spread over the abdomen and thighs. The baby died in four days. Sero-fibrinous peritonitis was found at the autopsy. The gravity of the disease is attributed to the absence of phagocytosis. The skin is only slightly œdematous, and shows hardly any inflammation. The streptococci meeting with no resistance rapidly produce a general infection. Curative treatment is of little avail, but prophylaxis should be effected by aseptic dressing of the umbilical cord, which is the usual starting-point of the disease.

J. D. ROLLESTON.

Varicella complicated by gangrenous erysipelas (*'Post-graduate,' May, 1908, p. 442*).—**H. G. Watson**.—A boy, aged 5 years, of a highly nervous temperament but otherwise normal, on the third day of an attack of chickenpox suffered from pain in the right groin in which an irregular erythematous patch appeared on the following day. Within thirty-six hours typical erysipelas had spread over the abdomen, and involved the scrotum, which was swollen to three times its natural size. Large blebs formed in both groins. The child was restless and looked ill. Temperature 100°–102° F. Pulse 100–130. On the tenth day a scrotal abscess formed, and a gangrenous slough had to be cut away. The ulcerations were treated with hydrogen peroxide and warm boracic lotion. Recovery took place.

J. D. ROLLESTON.

A plan of dealing with atrophic infants and children (*'Arch. of Pediat.,' 1908, p. 491*).—**H. D. Chapin**.—The Speedwell Society, inaugurated in 1902, has adopted the boarding-out system in carefully selected private families in a healthy situation near Morristown, New Jersey. A foster-mother tends the cases under the supervision of a doctor and trained nurse. All the children are bottle-fed. Not more than one infant is placed in one family. Natural surroundings are thus insured, and the danger of infection reduced to a minimum. Though the mortality during the first three months of life was high, Chapin thinks that the results were more satisfactory than they would have been in an institution.

J. D. ROLLESTON.

An unusual type of acute nephritis in childhood (*'Arch. of Pediat.,' 1908, p. 496*).—**J. Lovett Morse** records some cases of acute nephritis in children, which were peculiar in that the urine showed a complete or almost complete absence of blood and blood elements, and the presence of a large number of small round mononuclear cells often associated with a considerable number of polymorphonuclear leucocytes. The clinical symptoms were the same as those in ordinary nephritis, except that as a rule the cases were milder and the duration shorter. In some cases, however, the affection became chronic, or death preceded by convulsions occurred. Morse suggests that the condition is one of pyelonephritis rather than the ordinary acute glomerular or interstitial nephritis.

J. D. ROLLESTON.

Rickets and Mongolian pigment-spots in the coloured children of Jamaica (*'Arch. of Pediat.,' 1908, p. 503*).—**A. E. Vipond** examined 217 coloured children living in the poorest districts of Kingston, and found that in spite of improper feeding and poor ventilation they were practically free from rickets. Enlarged tonsils and adenoids, though common in the white children in Jamaica, occurred in only 3 per cent. of the black children.

Forty-four of the children showed the Mongolian pigment-spots described by Bremnermann (*v. BRITISH JOURNAL OF CHILDREN'S DISEASES*, 1907, p. 456). Eighty per cent. of the new-born children had them, but the percentage of spots lessened with increase in years. Thus they were present in 27 out of 40 children aged six months, in 40 out of 83 between one and two years, and only in 2 in children over two years of age. The spots were most frequently found on the lower part of the sacrum, then on the gluteal region, occasionally on the back, also on the shoulder, thigh, hip and legs. In the densely black child they have a bluish appearance; in many they were greenish. They remain stationary for some time and then fade.

J. D. ROLLESTON.

Recurring empyema (*'Arch. of Pediat.,'* 1908, p. 516).—**F. Huber** records six cases of this condition, which has received but little notice. In some cases the symptoms may be obscure, in others bulging at the site of the wound or physical signs attract attention. Recurrence is probably due to the microbes, which had hitherto remained latent in a pocket formed in the process of healing, becoming active under unknown favourable conditions.

J. D. ROLLESTON.

Fatal hæmoptysis in children (*'Arch. of Pediat.,'* 1908, p. 519).—**W. E. Magruder** reviews the literature of this rare condition, and records a personal case in a negro boy, aged 3 years, who died of pulmonary hæmorrhage within two months of the onset of the disease. The autopsy showed general glandular enlargement. The left lung was consolidated at the apex, with emphysematous areas throughout, and was completely studded with tuberculous nodules. The right lung showed pleuritic adhesions, and fluid was present in considerable quantity. In the upper lobe was found a cavity into which a branch of the pulmonary artery had ruptured and caused the fatal hæmorrhage. All the organs were full of tuberculous nodules. The rarity of hæmoptysis in tuberculous children is probably due to the fact that they are carried off by the effects of the disease in other organs before the lung tissue has been destroyed.

J. D. ROLLESTON.

The production of clean milk (*'Pediatrics,'* p. 475, 1908).—**Rowland G. Freeman** discusses the various ways in which milk becomes contaminated and the best methods of prevention.

J. D. ROLLESTON.

Weaning of the infant (*'Pediatrics,'* p. 481, 1908).—**C. Douglas**.—Infants should be completely weaned whose mothers would be seriously injured by nursing, or are suffering from some dangerous infection which can be transmitted through the milk. If the stools are entirely green during the first two weeks the infant should be weaned. Partial substitute feeding should be adopted when the milk is deficient, when the stools show much green mucus, or are of a watery consistence.

J. D. ROLLESTON.

Prevention of malaria in mission schools (*'China Medical Journal,'* vol. xxii, July, 1908, p. 232).—**J. H. Montgomery** adopted the following prophylaxis in a mission school consisting of fifty boys situated in a low-lying district in the Fukien province of China, where malaria was endemic. During the first week of the term each boy had a pill containing three grains of quinine every day; during the second and third weeks a two-grain pill four times a week; during the fourth and fifth weeks two grains three times

a week; and from then till the end of the term two grains twice a week. During the whole term of eighteen weeks only 23 cases of fever occurred, whereas from the histories obtained a minimum of 1512 was to have been expected. A very large percentage of the boys had had previous attacks; 80 per cent. had had attacks at least twice a week, 8 per cent. had had attacks once a week or once a fortnight, while only 12 per cent. had been seldom or never attacked. The quinine was mainly responsible for the reduction in the number of cases of malaria, but regular physical exercise, the absence of overcrowding in bedrooms and regular hours for meals also helped.

J. D. ROLLESTON.

Suppurative tonsillitis in infants (*Thèses de Paris*, 1907-1908, No. 263).—**H. Lagarrigue**.—Suppurative tonsillitis is rare in infants. The anatomy of the pharynx and the rhino-pharyngeal affections which are so frequent in infancy localise infection in the pharynx rather than in the tonsil. The symptoms of the affection in the nursling, generally speaking, are those noted in the adult, but the symptoms special to infants are the slight degree of dysphagia and trismus, dyspnoea, modification in the child's cry, which is either nasal, stifled, or completely lost, and the grave change in the general condition. The condition must be diagnosed from retro-pharyngeal abscess. The prognosis is good. The treatment consists in a rapid evacuation of the abscess, either surgically or by an emetic. The thesis contains the histories of three cases, two of boys, aged 8 and $9\frac{1}{2}$ months respectively, and one of a girl, aged $2\frac{1}{2}$ months, whose mother had recently had a sore throat.

J. D. ROLLESTON.

A case of congenital stenosis of the aorta (*St. Thomas's Hosp. Reports*, vol. xxxv).—**H. R. Dean** reports a case of congenital stenosis of the aorta in a boy, aged 7 years. There was no history of rheumatism. For the last few years he had suffered with cough with expectoration, and later considerable dyspnoea on exertion. On admission there was a moderate degree of cyanosis, the fingers were slightly clubbed, and the radial pulses were extremely small. The cardiac impulse was $\frac{1}{4}$ inch beyond the left nipple line. Cardiac dulness began above at the second left intercostal space, and extended from $\frac{3}{8}$ inch to the right of the sternum to the apex-beat. A well-defined systolic thrill could be felt over the base of the heart, somewhat more distinctly to the right of the sternum and over the chest-wall above this level. It could be felt over the great vessels at the base of the neck, and was very marked in the supra-sternal notch. A definite shock synchronous with the second sound was felt to the left of the sternum over an area corresponding to the second and third costal cartilages and the intervening space. A loud systolic murmur was audible at the base and apex. It was loudest at the base, at the aortic cartilage, and conducted upwards, being plainly heard at the base of the neck. The second aortic sound was accentuated. The murmur was not continued into diastole. The lungs were normal and no enlargement of the liver or spleen was detected. The X-ray report was as follows: "The shadow of the aorta is seen on both sides of the sternum, showing it to be wider than normal. Heart slightly enlarged, especially to the right."

JAMES E. H. SAWYER (Birmingham).

Congenital hypertrophic stenosis of the pylorus (*St. Thomas's Hosp. Reports*, vol. xxxv).—**H. R. Dean** reports the case of a male infant,

aged 11 weeks, who suffered from congenital hypertrophic stenosis of the pylorus. When three weeks old the child was noticed to be wasting and very constipated. About ten days before admission persistent vomiting commenced. On several occasions the stomach outline was plainly visible. Active peristalsis was seen, but no tumour was felt in the pyloric region. The child was unable to retain any food given by mouth, and steadily lost weight. At the post-mortem examination the stomach was only slightly enlarged, but its wall was very distinctly hypertrophied. The pyloric region was felt to be thickened. The stomach was distended with water, but none escaped from the pyloric end. The pyloric orifice admitted a probe with ease. The stomach was opened, and great hypertrophy of the mucosa was noticed at the pyloric orifice. A fold of mucous membrane formed a valve which completely occluded the orifice of the pylorus.

JAMES E. H. SAWYER (Birmingham).

Case of chronic colitis (*'St. Thomas's Hosp. Reports,' vol. xxxv.*)—**H. R. Dean.**—Female, aged 10 months. There was an attack of diarrhoea and vomiting when three months old. For about three weeks before death vomiting and diarrhoea were persistent, and the child became greatly emaciated. At the post-mortem examination the colon was found to be thickened throughout. A tenacious yellow exudate lined the inner surface of the colon. When this was sponged off the surface was found to be finely granular, resembling Morocco leather. There was no ulceration.

JAMES E. H. SAWYER (Birmingham).

Bacteriology of a case of cancrum oris (*'Jahrb. f. Kinderheilk., Bd. 67, H. 3.*)—**Kellsen** considers that bacteriological and experimental researches show that a diplococcus was undoubtedly the cause of the disease in a case under his care. Yet he admits that further researches are necessary to establish this opinion.

J. E. BULLOCK.

Pathology.

Primary tumours of the adrenal glands in children (*'Amer. Journ. of the Med. Sciences,' June, 1908.*)—**Wilder Tilerton** and **S. Burt Wolbach** report the case of a male infant, aged 16 months, suffering from a tumour of the right adrenal gland. The superior border of the gland was intact, but the medulla of the bulk of the gland was continuous with the tumour tissue. The dimensions were: vertical diameter, 12 cm.; transverse, 8 cm.; antero-posterior, 8 cm. There was a large mass of soft, pink and deep-red glands at the angle of the jaw, and those along the sterno-mastoid were firm, large and grey. The scalp was markedly oedematous. Beneath the aponeurosis of the whole frontal regions was a soft elastic tumour, deepest just below the frontal eminence, where it was 5 cm. deep. Inferiorly it was continuous with tumour tissue on the side of the face and behind the zygoma. The parietal suture was studded with small, soft, reddish elevations. A large extra-dural tumour filled the whole anterior fossa of the skull. It was 6-7 cm. deep, and continuous with the tumour on the external surface, through an opening 2-3 cm. in diameter, in the frontal bone directly over the orbit. The whole of the tumour within the skull was dark red, and in places very soft and necrotic. The right orbital plate was elevated and eroded. All the accessory sinuses, the antrum of Highmore, and the nasal cavity were filled with dark red, soft tumour tissue. The left orbital

plate was recessed, and the posterior part of the orbit contained tumour tissue. There was marked deformity of the floor of the skull; the basilar process of the occipital bone was directed inwards to the left. There were no tumours in the brain or any other organ. Microscopically all the masses were similar, and were a small round-celled sarcoma, belonging to the type in which the cells are supported by a reticulum. The cells resembled the undifferentiated cells of the bone-marrow. The authors proceed to classify tumours of the adrenal glands in children as follows: (1) Those with metastasis to the skull (Hutchinson's type); (2) those of simultaneous sarcoma of the liver and adrenal glands; (3) those associated with precocious maturity; and (4) those not falling under any of the preceding headings. The rest of the paper is devoted to a summary of thirteen published cases of adrenal tumours in children, with a discussion on the different types, and a few remarks about the diagnosis and treatment.

JAMES E. H. SAWYER (Birmingham).

Large cancerous growth of the left kidney of a boy, aged 8 years, weighing thirty-one pounds (*Transactions of the Pathological Society of London*, 1855-6, vol. vii, p. 268).—The child's abdomen soon after birth became rather larger than normal, and continued to increase in size. After admission to the Middlesex Hospital it very rapidly grew in size; the surface of the belly became marked by large tortuous veins. The enlargement was produced especially on the left side by a tumour thirty-six inches vertically and thirty inches in diameter, slightly movable, not painful on pressure, in parts semi-elastic. The child's bowels acted regularly, appetite remained good, but swelling increased in size so that the patient was unable to leave his bed, and ten months after admission died from exhaustion. Post-mortem: The left leg was œdematous and the superficial abdominal veins were much enlarged; the parietes of abdomen were adherent to the tumour, which filled the abdominal cavity; the viscera were much displaced, the liver, spleen and stomach being pushed upward, expanding the lower ribs on both sides. The sigmoid flexure of the colon was adherent to the front of the tumour, but there was no obstruction to the passage of faecal matter. The left kidney was enormously enlarged; the ureter was of natural size, and contained some clear urine; the kidney tissue appeared tolerably normal. Beyond the limit of the normal tissue, the kidney was converted into a thick fibrous layer surrounding the growth, which weighed thirty-one pounds, containing eight pints of dark, grumous, viscid fluid and yellowish and shreddy, sloughy masses. The body of the tumour consisted of soft gelatinous medullary cancer of a yellowish colour with patches of semi-transparent material traversed by fibrous bands. The right kidney weighed seven ounces and exhibited no trace of disease; it was rather pale and flabby. The other viscera were all free from cancer and otherwise tolerably healthy.

THOMAS WILLIAM NUNN.

Therapeutics.

Vermifuges in infancy (*Brazil Medico*, March 22, 1908).—Pinto, as the result of many experiments, highly recommends the following prescription for tape-worm in children. This is for a child of two years: Ethereal extract of male fern 1·0, calomel 0·10, in an emulsion with cream or cocoa and essence of cinnamon. Three quarters of an hour later he gave 5 grams of tincture of jalap in syrup, which was vomited; after a small enema of pure

water the tape-worm was passed entire. He points out that great caution is required in administering male fern to children; several fatal cases are on record.

M. D. EDER.

The treatment of syphilis in children (*Münch. med. Wochens.*, No. 24, 1908).—Eysell treats the coryza in children suffering from hereditary syphilis by insufflating each nasal cavity with 100 mgr. of a mixture of equal parts of calomel and milk-sugar. The symptoms disappear in a few days, and the general condition is greatly improved by continuing the treatment. In children above ten years of age a mixture of 0.1 to 0.3 of calomel with 0.05 to 0.15 of milk-sugar was used three times daily. The same good results were obtained in adults with mucous patches or ulcers in the nose or on the tonsils. Syphilitic lesions in other parts also disappeared under the same treatment.

T. R. WHIPHAM.

Otology, Laryngology, and Rhinology.

The healing of infected tracheal wounds (*Arch. für Laryngologie*, vol. xx, p. 2).—Streit gives details of the results of his experiments on seventeen full-grown cats. In each case a tracheotomy was performed and the wound inoculated with a fresh culture of capsulated bacilli and left open. Some of the animals died of septico-pyæmia or pneumonia; the others were killed after a certain number of days or weeks, and the trachea and wound histologically examined. *Epithelium*: Regeneration was found to begin early, and on the third day a thin layer of flattened epithelial cells was seen spreading from the edge of the old epithelium. On the fifteenth day the continuity of the epithelial covering was largely re-established. On the twenty-seventh day many ciliated cells were present, but in this respect restitution was not completed even after five months. *Glands*: Regeneration of these was first observed some five or six weeks after operation, and after five months they were present in the mucous membrane in almost normal quantity. The *cartilage* twelve days after operation showed definite signs of regeneration in the shape of collections of cartilage cells in relation with the cut tracheal cartilages. In the intervals between the cut ends the formation of cartilage was observed on the fifteenth day. On the forty-third day the cut ends were found to be united partly by dense connective-tissue bundles and partly by young cartilage, apparently perichondrial in origin; a strong perichondrial capsule covered the outer surface of the cartilage. Streit's results agree largely with those of Barth and Marehand.

MACLEOD YEARSLEY.

Note on hypertrophy of the pharyngeal lymphoid tissue: its relations with tuberculosis (*Gaz. des Hôpitaux*, September 22, 1908).—Nobécourt and Tixier give the results of their investigations of 22 children with adenoids and enlarged tonsils, of ages varying from 31 months to 14 years. The palatine and naso-pharyngeal tonsils were submitted to bacteriological and histological examination, and the children underwent the tuberculin tests (subcutaneous, skin, and ophthalmo-reaction). Of the 22 children, 13 had no clinical manifestations of tubercle; in 6 the signs were doubtful (peripheral poly-adenopathy, mediastinal glandular enlargement and apical bronchitis). In 3 only was tuberculosis unquestionable (2, incipient tuberculosis of the apex, and 1, tubercular cervical glands). Subcutaneous injection of tuberculin in a dose of 1 milligramme was made

in 18 subjects. A positive result followed in 7 instances, 2 of which were considered clinically tuberculous. The skin reaction was applied in 18 cases; the result was positive in 12, especially so in the case of two known to be tuberculous and in 2 other suspects, who had reacted to the subcutaneous injection of tuberculin. The ophthalmalmo-reaction test was practised 13 times; a positive result followed 4 times only, especially so in 2 admittedly tuberculous. It is interesting to note that, as a result of the tuberculin test, only 5 out of 22 children could be considered free from tubercle, yet the majority of them enjoyed good health. The tonsils were inoculated into guinea-pigs, but many of them died too rapidly to afford any information as to tuberculosis. In 7 where an autopsy was made at the correct period, no tubercular lesion was found; amongst these were two which had been inoculated with tissue from tuberculous children. As regards inoculation with adenoids, in one case only was a pig made tuberculous, and in this case the adenoids belonged to a child not clinically tuberculous. Tonsils were histologically examined in 16 cases, and adenoids in 15. No tubercular focus was observed. Multiple sections from the adenoid mass which had tuberculised the guinea-pig revealed nothing. Preparations stained by Ziehl's method gave no indication of Koch's bacillus. The writers conclude from their investigations that proof is wanting that the pharyngeal lymphoid tissue serves as a portal for bacillary infection.

MACLEOD YEARSLEY.

Surgery.

Surgical scarlet fever (*Jahrb. f. Kinderheilk.*, Bd. 68, *Erg.-Heft*, p. 143).—**Nathalie Davidovitch's** paper is based on a study of the cases in Eichhorst's service at Zürich cantonal hospital since 1888. The following classification is adopted: (1) Scarlatina due to accidental wounds including burns (21 cases); (2) scarlatina during the puerperium (11 cases); (3) scarlatina following surgical operations (19 cases). Of the 51 cases only 15 were below fifteen years, and were mostly cases of burns. The predilection of surgical scarlet fever for adults is attributed to their being most exposed to injury and therefore to infection. Complications were rare and slight. Nephritis was not noted.

J. D. ROLLESTON.

Hydrocele colli Maunoir (*Allg. Wiener med. Zeitung*, June 16, 1908).—**Wittner** reports a tumour of this nature in a girl, aged 10 years. There was an irregular swelling on the left side of the neck, between the angle of the lower jaw and the mastoid process above, extending below from the larynx to the odontoid process. The swelling was composed of cysts with an imperceptible pulsation, separated from one another as if by definite septa and having an elastic fluctuation. The skin was normal, and the slight pulsation was apparently conducted from the big vessels behind the tumour. On slight pressure the tumour became markedly smaller without the patient experiencing the slightest pain. There was no glandular enlargement. The presence of similar cystic formations could also be made out on the right side. According to the father's account the swelling was first noticed two years before and had gradually increased in size. The only other sign was well-marked Hutchinsonian teeth. By means of a very fine trocar the cysts were aspirated and a few drops of clear, wine-coloured fluid drawn off, which differentiated it from blood-cysts, which, moreover, are not diminished in size by pressure.

M. D. EDER.

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Original Articles.

THE NEED FOR MORE PROMPT AND THOROUGH
TREATMENT OF CHILDREN SUFFERING FROM
RHEUMATISM OR CHOREA.

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THE medical man who is called upon to treat a rheumatic or choreic child has a great responsibility—too often overlooked, and a splendid opportunity—too often lost! For he has the chance of arresting in its earliest stage a morbid process which, if unchecked, may be fatal within a few weeks or months; and which, if inadequately treated, may relapse again and again, and may so damage the child's heart as to cripple its energies and to cut short its life. Almost the whole of the heart-disease which exists in patients under thirty years of age and a very considerable proportion of the heart-disease of later life is the result of a rheumatic infection in childhood, which was either unrecognised or ineffectively treated. It is very easy to overlook a cardiac rheumatism in a child unless the physical examination is promptly and thoroughly carried out, for the cardiac muscle may be grievously affected though no murmur is to be heard on auscultation, and the external evidence of rheumatism afforded by arthritis, so abundant in the adult, may be almost or even entirely lacking in the child. And if the actual condition of the heart of a

child suffering from rheumatism has been accurately diagnosed, the treatment is only too likely to be entirely inadequate. There are few medical men who are convinced that sodium salicylate is as specific against rheumatism as quinine is against malaria or mercury against syphilis; there are yet fewer who will not give up the drug as soon as any unpleasant side-effect is produced, and fewer still who know how to avoid these difficulties and how to succeed in accustoming the patient to large and frequent doses of the drug. Yet this accurate and early diagnosis and this prompt and thorough treatment are both necessary if the rheumatic process is to be arrested and lamentable cardiac injury to be avoided. If these two essentials were supplied by every medical man who undertakes to treat a rheumatic child, it is quite certain that the amount of heart-disease found in the next generation among adults would be very much less than that now existing.

The fate of the patient depends mainly upon the action or inaction of the medical man in whose charge he is placed; this fact involves a heavy responsibility which at present is hardly realised.

Every child who complains of sore throat or of pains in his joints, muscles, or tendinous structures, every child who suffers from malaise and unexplained pyrexia, every child whose skin shows spots of erythema or who has subcutaneous nodules on his tendons or round his joints, or subperiosteal nodules on his bones, every child who has pain in the chest, or shortness of breath, or marked pallor, and every child exhibiting even slight choreic movements or merely weakness and inco-ordination of muscular action or emotional instability should be at once put to bed, and his heart should be promptly and most carefully examined.

The earliest evidence of cardiac rheumatism in a child or in an adult is obtained, not by auscultation, but by percussion. For the affection of the cardiac muscle preceeds, probably in all cases, any endocarditis or pericarditis, and the earliest cardiac rheumatic phenomenon, as I pointed out ten years ago,* is an acute dilatation of the left ventricle, which is easily recognised by a careful light percussion. For this purpose it is necessary to avoid every kind of artificial pleximeter, to press the terminal phalanx of a finger of the left hand firmly on the spot to be percussed, keeping the whole of the rest of that hand away from the chest-wall, and to percuss lightly on this terminal phalanx by a finger of the right hand bent and used as a hammer. By this method it is quite easy to determine the extent of the true cardiac dullness to the right and to the left

* 'Med. Chir. Trans.,' 1898, p. 401.

and therefore the true size of the heart. The "superficial dullness," as it is called, indicates merely the extent of the heart not covered by lung, and is nearly worthless; what is wanted is the real size of the heart. In the normal heart it is always possible to detect nearly one fingerbreadth of dullness to the right of the sternum in the fourth intercostal space, produced by the right auricle, and the dullness of the left ventricle extends a little beyond the position of the cardiac impulse, but not so far as the left nipple-line.

In a first attack of rheumatism the dullness of the right auricle is often unaltered, but that of the left ventricle is always increased towards the left; almost always it reaches the left nipple-line, usually it extends still further, frequently one fingerbreadth to the left of it, sometimes even two fingerbreadths. Along with this evidence of dilatation of the left ventricle there will be a diffused and weakened cardiac impulse, a weaker pulse-wave in the arteries, a shortened or enfeebled first sound at the apex, and a distinct accentuation of the pulmonary second sound. The aortic second sound is often increased also. A systolic murmur at the apex may be absent or present. The pulse-rate is abnormally frequent, and a further increase quickly follows a slight exertion.

The nature of the morbid changes in the heart-wall which underlie these clinical phenomena have been carefully described by Dr. Carey Coombs in a recent article on "Rheumatic Myocarditis" in the 'Quarterly Journal of Medicine,' vol. ii, No. 5. The cardiac muscle-cells are found to be affected by "a fatty change, which is most pronounced in the wall of the left ventricle, particularly in the papillary muscles and beneath the pericardium." This is clearly the result of some toxæmia; it is a proof of the existence of a poisonous action exerted on the muscle-cells. The extent of the damage to these cells is, however, not completely revealed by the obvious fatty changes; it must be estimated by the muscular atony produced, which permits of a rapid dilatation of the ventricle. This may become extreme. "Dilatation of both ventricles is constant, and often of considerable degree; the auriculo-ventricular orifices share in the stretching." Further light on the nature of the morbid process is obtained by the examination of the interstitial connective tissue around and between the cardiac muscular bundles. In this structure "nodules are formed, consisting entirely of large cells, many of which are multinucleate, and which seem to be fibroblastic in nature. . . . They develop especially in the neighbourhood of arteries and arterioles; the left ventricle is far more affected than the right, particularly near the root of the aorta and the mitral ring

and at the apex near the ventricular septum." They are "most thickly sown in the central parts of the myocardium," but they are also freely scattered "just under both serous layers, especially in the subpericardial tissues." They must be "regarded as a highly characteristic form of connective tissue reaction to irritation." They are found also "in the valves near their free edges, and in the chordæ tendinæ at some depth from the endothelial surfaces." Dr. Coombs concludes that these nodules "represent the reaction of the connective tissues to an infection rather than an intoxication only, and that the infective agent itself comes in contact with the tissues at the points where the nodules form."

The "infective agent itself" has been revealed by the researches of Poynton and Paine.* In more than thirty cases of rheumatism and chorea they have demonstrated the presence of a diplococcus, and they have shown that this microbe is capable of producing in rabbits not merely endocarditis, but cardiac dilatation, myocarditis, pericarditis, arthritis, pleurisy and pneumonia, also subcutaneous nodules and teno-synovitis; in short, *all the severe lesions found in a rheumatic child*. And Dr. Vernon Shaw, working with a culture of their micro-organism, produced similar cardiac lesions together with multiple arthritis in monkeys.

I add two facts within my own knowledge. The first is that a rheumatic nodule of recent origin in a child in St. Mary's Hospital, when excised by Dr. Poynton under aseptic precautions, at once placed in a sterile nutritive medium and incubated for forty-eight hours, showed on section (as I can testify) an exuberant and pure growth of a diplococcus. Since the "nodule" is especially distinctive of rheumatism, this observation appears very convincing. The second fact is that a diplococcus was obtained *from the blood* in more than one of my rheumatic patients during life, and that in one of these cases the infection was certainly not simply "terminal," as suggested by sceptical bacteriologists, for the patient is still alive, and in good health, eight years after the venesection.

The acute dilatation of the left ventricle, above described, is present even in the mildest attacks of "subacute rheumatism." During the ten years which have elapsed since the reading of my paper, and of a following paper conjointly with Dr. Poynton, at the Royal Medical and Chirurgical Society, I have never seen a first attack of this disease, either in a child or in an adult, in which this dilatation was absent. This means that, even in the most "subacute" case, the cardiac muscle-cells are more or less poisoned, and that in the con-

* 'Lancet,' 1900, vol. ii, pp. 861 and 932, and subsequent papers.

nective tissue which surrounds them pathogenetic bacteria are present. Hence it is obvious that even the mildest case ought to be at once put to bed and kept in complete rest. A practitioner who allows himself to be misled by the apparent triviality of the symptoms is doing his patient a grievous and, perhaps, an irreparable injury. To keep the child at rest for a time can do nothing but good, whatever be the cause of his cardiac dilatation. If any distinctively rheumatic symptom (however slight) is present, salicylate of soda in sufficient doses should be at once administered, and to each dose should be added twice as much of sodium bicarbonate. If any unpleasant side-effect, *e. g.* vomiting, should be produced by the salicylate, the medicine should be discontinued for a few hours. It should then be repeated, but in only half or two thirds of the former amount, and the size of the dose can then be rapidly increased. If any further difficulty occurs this process should be repeated. It is possible in this way to train nearly all patients to tolerate large doses of the drug, and the curative effect is very greatly increased.

In the more severe cases of rheumatism, especially where pericarditis is present, the local application of an ice-bag is often of extreme value. For further details as to method, and as to necessary precautions, I must refer to my recent article on "The Effective Treatment of Acute and Subacute Rheumatism," in the 'British Medical Journal' of January the 16th, 1909. It is only necessary to add that whenever salicylate is given to rheumatic children, the bowels must be kept open, and the urine should be rendered slightly alkaline; these are the two conditions of safety.

With regard to chorea, although it has not yet been proved that chorea in a child is in all cases of rheumatic origin, yet it is quite certain that the great majority are due to a rheumatic infection. Every case of chorea in childhood ought, therefore, to be considered as presumably rheumatic, and ought to have the benefit of this probability. Every case ought to be at once sent to bed, and treated vigorously as for rheumatism.

CASE OF SYPHILITIC SYNOVITIS.

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AN unusual case of syphilitic synovitis has lately come under my notice at the Children's Hospital, Temple Street, Dublin. A girl, aged 5 years, was sent up to the hospital from the country with a history of several months' illness. No diagnosis seemed to have been made and the child was treated by general tonics. After examination of the child a history of repeated miscarriages of the mother was elicited.

The child was carried into the hospital, being unable to walk. She was pale, but fairly nourished. She seemed extremely weak and could only sit up with difficulty. She was unable to stand up. The teeth were regular, and there was no depression of the nose nor scars about the mouth. She was slightly feverish, and flushed during examination. She complained of no pain, even on being moved. She was quite intelligent, but appeared depressed. On further examination her joints revealed an extraordinary condition. Both knees, ankles, wrists and elbows were swollen. The knees were especially large and distended with fluid. The muscles of the extremities were wasted and flabby, and enlarged glands were quite palpable in the groin, axillæ, and neck, in front of the sternomastoid at the angle of the jaw. Nothing else abnormal was discovered. The temperature was 100° F.

The child was admitted to hospital and for a month received mercurial treatment, including three grains of potassium iodide three times a day. Equal parts of lanoline and mercurial ointment were applied to the joints affected, and the child got all the nourishment she could take. Syrup of the iodide of iron was also prescribed.

As was feared, no improvement in the condition took place of any importance, and she left the hospital. During her stay she was subject to slight febrile attacks. About twice in the week her temperature would rise to 100° F. and then subside after a day or two. The mercurial treatment is being continued at home.

The case was one of those sometimes reported of extreme chronicity and intractability to treatment. It was unusual in its severity, in the number of joints affected, and in their symmetrical location.

Dr. G. A. Sutherland (1), after referring to the inutility of drainage

of the joints in such cases, says: “. . . my own experience of syphilitic synovitis has been that this affection, like interstitial keratitis, tends to run a prolonged course, over several years, it may be, with temporary improvement, with possibly a period of cessation and then a relapse, and that no treatment, mercurial or otherwise, will have any direct effect.” Mr. D’Arcy Power (2), speaking of these



FIG. 1 shows enlarged joints, wrists, knees, and ankles.



FIG. 2 shows enlarged glands.

cases, says: “These patients are often so completely permeated by syphilis that very little can be done for them.” There is no doubt that in this case the child was “completely permeated with syphilis.” The number of joints affected, the cachexia, the febrile attacks, and the failure of mercurial treatment suffice to prove it. Such a child is much better off in the country, where it can have abundance of wholesome food and fresh air. In the maintenance of strength lies the only hope of cure after a weary struggle; and that is but small

when one considers the probability of the entrance of tuberculosis and the feeble resisting power to oppose its ravages.

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1. G. A. SUTHERLAND.—‘The Treatment of Diseases in Children,’ 2nd impression.
2. D’ARCY POWER.—‘Surgical Diseases of Children.’

ON SOME FORMS OF CHRONIC LUNG DISEASE IN CHILDHOOD.*

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(Continued from page 60.)

Chronic bronchitis.—When one refers to the books for the causes of this affection in childhood the information obtainable is scanty. To quote one observer, “Chronic bronchitis is sometimes the result of an acute attack or several such; it sometimes remains after whooping-cough; sometimes it is a sequel of atelectasis, and sometimes all we can say is that it exists, but how it came about there is no evidence to show.”

One could add, with Hoffman, that post-nasal obstruction is also very frequent, both as a cause and as an accompaniment.

The affection exists in every degree, but in the more pronounced and confirmed conditions, to which I particularly refer, there is more or less cyanosis, alterations in the shape of the chest, bulbous finger-ends, generally lethargic movements, and a frequent short, moist cough. There is no doubt that localised tubal dilatation exists in some of these cases, and that they are, in fact, the early stages of bronchiectasis.

In many of the books there is failure to distinguish between chronic bronchitis, which is simply bronchitis, and that in which there is tubal dilatation. Pepper, for instance, describes all the cases under the title of bronchitis, ignoring bronchiectasis as meriting a separate description. Goodhart, in describing the post-mortem appearances, proves that he is referring almost exclusively to cases in which dilated tubes exist. He certainly made special allusion to

* Being, together with illustrative clinical cases, a Post-Graduate Demonstration given at the Leeds Public Dispensary.

bronchiectasis, remarking that it is an open question as to whether it should be considered a distinct disease.

All this goes to show that no sharp line can be drawn between simple chronic bronchitis and early bronchiectasis. I think the question of title is important. I agree with the view which is gaining ground that in many of these cases of so-called simple, chronic bronchitis there is a dilatation of the tubes left over from the original acute attack. If ectasy does exist let us recognise the fact by labelling them, as far as we can, as bronchiectatic. For there is an important clinical difference between the two affections; the dilatation maintains the chronic bronchitis, and this, in a vicious circle, increases the tubal dilatation.

In such cases the disease progresses in one of three main ways:

(1) Continuance as simple chronic bronchitis with progressive aggravation of symptoms, ultimately resulting in right heart failure.

(2) Development into unequivocal cases of bronchiectasis.

(3) After a variable period—which, for the encouragement of those who have to treat them, may be a very long one—certain cases may get well; this may happen even where there has been some tubal dilatation.

Here, again, Goodhart says: "Such cases, however, repay care, for again and again they may pull through a serious attack when apparently they are in an almost hopeless state, and I think that one is justified in saying that, in many cases, something amounting to repair goes on. In young children it is not incorrect to say that they may grow out of it, for they greatly improve as their ribs stiffen. But there are other risks, and these come about by the medium of dilated bronchial tubes."

Bronchiectasis.—By now it will be apparent that I am inclined to assign this condition an important place in the pathology of the cases under discussion. The full consideration of bronchiectasis occupies a large and much disputed field, and I do not propose to enter it. The fact about which there is no doubt is that a large proportion of all cases of bronchiectasis take origin in early life. Arnold Chaplin states that out of 200 cases under his notice 60 dated the onset of the disease from some acute lung attack in childhood. The common history which he obtained was congestion of the lung complicating measles or whooping-cough, or some other acute infection, with persistence of the cough. My own cases show, for the most part, a similar beginning, and the frequency of bronchiectasis in early life will therefore be readily appreciated.

Yet the prevailing idea seems to me to be that bronchiectasis is *rare* in childhood, and the explanation would seem to be that what may be termed "developed cases" are certainly not of frequent occurrence under ten years of age, but still are not as rare as is sometimes alleged. The extreme chronicity of the cases and the slow increase of their symptoms and signs is such that their true nature may not be realised till the patients themselves have passed out of childhood. And then it will generally happen that not the mother but the patient gives the history, and what is more than likely that such history is clipped and slurred over from sheer lack of knowledge on the part of the patient about the beginning of his own case.

A special variety of bronchiectasis in early life is sometimes described as *bronchiolectasis*, or dilatation of the smaller tubes, with an acute or subacute course. Some of the recorded cases are of uncertain pathology, but there is certainly no difficulty in seeing in the widespread dilatation of the smaller tubes, which occurs in connection with certain pulmonary inflammations, an extreme instance of the way in which ectasy may complicate such inflammations in early life.

It is disputed whether bronchiectasis is a primary or a secondary affection. Though interesting, the matter is not of great practical importance. What is both indisputable and important is that certain pulmonary affections—more especially catarrhal pneumonias, and particularly when complicating whooping-cough and measles—are liable to be followed by the dilatation of the tubes, and to be attended by certain symptoms such as I have described.

It is now regarded as probable that yielding and dilatation of the tubes frequently takes place in the acute stage of the original inflammation: and Fox insists that such dilatation is readily recovered from in children, explaining thus the infrequency of bronchiectasis in spite of the great frequency of bronchitis. Ewart, writing in 'Allbutt's System,' says: "The post-mortem recognition of a dilatation of the small tubes in connection with certain symptoms noted during life led observers to infer that in other cases also, which presented the same symptoms that ultimately ended in recovery, the same lesions had existed without proving fatal; and it is upon this assumption, which is probable enough, but not capable of demonstration, that rests the current belief that children may completely recover from acute bronchiectasis. Granting that recovery may be possible it may in a proportion of the cases be but partial; and in these the dilatations persisting in some portions of the lung may

lapse in the course of years into the common bronchiectasis of the larger tubes."

This local persistency I hold to furnish the explanation of many of the cases of delayed resolution referred to above—cases in which the tubes are slow in recovering. If instead of recovering the dilatation persists, we then have the formation of a bronchiectatic area more or less limited, generally attended with fibrosis of the adjacent lung tissue. This may slowly develop into the typical cases of later life, or—and this is an important practical fact—the condition may, even though rarely, be cured by an obliterative fibrosis.

But more frequently than is supposed does a series of chronic lung cases in childhood furnish typical examples of bronchiectasis, and it is convenient here to briefly outline the clinical features of these cases. To get a better picture of this disease one divides it—arbitrarily, of course—into stages. I prefer to follow Hoffman in differentiating three such. In the first the affection is apt to be confounded with an ordinary bronchitis; but we notice that the bronchitic symptoms appear especially and persistently in certain circumscribed areas: or, as Goodhart puts it, "the physical signs are those of coarse bronchitis, with occasionally some sharp râles here and there. It is but seldom that anything suggestive of cavitation is heard when the dilatation of the tubes is at all generally distributed throughout the lung; probably because these dilatations usually occur in the substance of the lung, and are surrounded by vesicular pulmonary tissue."

In the second stage the case becomes more characteristic. With a satisfactory general condition we find a surprising irregularity in the expectoration; it is at times scanty and at times very abundant; there may be a marked periodicity, so that at certain times of the day (especially the first thing in the morning on arising) there is an abundant expectoration, which may be almost or wholly absent at other times of the day. This condition may last a very variable time and may remain stationary for years.

This stage is especially distinguished by the "cyanotic habit," and stands for bronchiectasis pure and uncomplicated. There are local physical signs, generally basal, but, as noted previously, in rare and exceptional cases they may be apical, thus leading to a suspicion of phthisis. The "wearing-out" tendency of the affection is in the direction of emphysema and right-heart strain, and this, together with the prevention of the third or septic stage, supplies the indications for treatment.

But generally the third stage, that of septic cachexia, is reached sooner or later owing to the tubal contents becoming secondarily infected. This aggravates all the pre-existing conditions—the bronchitis, emphysema, and right-heart strain and the symptoms due to them, but in addition, the patient runs two great risks, firstly, that of local septic accidents, such as abscess, gangrene, and septic pneumonia, and secondly, the results of septic absorption. This may take the form of metastasis—abscesses in the brain are not infrequent—pyæmia, or lardaceous disease.

Pure uncomplicated fibrosis of the lung may arise from a variety of causes. Unless complicated by tubal dilatation, which, however, is the rule, it may not give rise to much trouble. What symptoms do exist are generally due to the affection of the rest of the lung—for instance, emphysema—that may have developed *pari passu* with the fibrosis.

An uncomplicated fibrotic area in the lungs produces more in the way of physical signs than symptoms. There is usually well-marked localised dulness and recession of the chest-wall in proportion to the extent of the fibrosis, and the heart is usually drawn towards the fibrotic area: some amount of chronic cough and expectoration is present. These simple fibrotic cases are relatively infrequent, and from the fact that symptoms are slight are those most likely to be discovered on routine examination of the chest. A careful investigation of the history and a consideration of the physical signs present will almost without exception enable tuberculosis to be excluded in childhood.

But in bronchiectasis the rule is for secondary changes to occur: as Walshe puts it, the surrounding tissue is either slightly condensed by pressure, hardened by chronic pneumonia, rarefied by emphysema, or perfectly natural. And nearly every case of bronchiectasis of any standing is accompanied by fibrosis around the tubes. In such conditions the physical signs of consolidation and retraction tend to be more marked, and the periodicity and abundance of the expectoration less marked than in simple bronchiectasis.

This combination of fibrosis and bronchiectasis has given rise to much dispute. Sir Dominic Corrigan's classical description of lungs so affected and his theory of the cause of the dilatation passed current for many years. According to him the adhesive pleurisy which invariably exists enables the fibrous tissue in the lungs, contracting as fibrous tissue must, to pull the tubes apart, thus making the dilatation secondary to the fibrosis. This view is now vigorously assailed, notably by J. K. Fowler and Hoffmann; they would place

the dilatation before, or at least coeval with the fibrosis, and maintain that all contraction of fibrous tissue must be centripetal, and therefore would tend to exercise an obliterative and curative action. We lack case-histories of pronounced ectasis undergoing cure; this view lends probability to the statement that it does happen in exceptional cases.

Atelectasis of considerable portions of the lung, such as occurs typically in early infancy under various conditions, takes a place in our series, if life be preserved and the condition persists. The persistent atelectatic areas undergo chronic progressive changes such as adhesion, bronchiectasis, or even tuberculosis.

There remains for consideration a small number of cases in which there exists a *single cavity*, of some size, giving rise to chronic discharge by expectoration. The condition may be left over from a pulmonary abscess—indeed, it is a chronic abscess—such as may follow a septic pneumonia after operations on the mouth or elsewhere, in one of my cases after an operation for adenoids. But the commonest cause is, perhaps, the bursting of an empyema into the lung and the persistence of a cavity with suppurating walls, retention of secretions, and periodic discharge. Empyemata may rupture internally, and the nature of the accident is either not recognised at the time or is forgotten in the subsequent history. These cases for the most part give rise to symptoms and signs indistinguishable from those resulting from bronchiectasis with more or less fibrosis. The prognosis is possibly better as regards the tendency to obliteration than in the bronchiectatic cases. The practical importance of making an exact diagnosis lies in the fact that when there is but a single cavity it may be drained by surgical means; this may sometimes be done with the happiest results. But the diagnosis is extremely difficult. As a rule very little help is afforded by the physical signs unless the cavity be a large one and near the surface; similarly there is nothing in the symptoms that may not be caused by bronchiectasis, with a series of cavities. One has to rely, therefore, mainly on the history, and this is especially difficult to verify in this class of case. A typical history would be that of onset by acute pneumonia, and then a sudden copious discharge of pure pus, with lessening evacuations at, say, longer and more irregular intervals than one would expect in a bronchiectasis.

Emphysema.—As a primary affection this occurs with extreme rarity in children. Secondly it may, and often does, occur in association with almost all the above groups of cases. Similarly, too, true *asthma* falls outside my clinical group, though secondary

bronchial asthma may complicate some of the cases, though I think not with any great frequency.

I have sought to pass a large group of cases thus broadly in review, because it seems to me a better conception of their relationships is obtained. And in so doing, also, the more important points in differential diagnosis are developed. Of course, by such a brief survey one must suppress innumerable points of detail. I have made no serious attempt, for instance, to describe the physical signs of the various conditions. After all, these are well enough described in the books; the essential thing is to grasp the "underlying pathological possibilities"—as, for instance, that a chronic bronchitis may mask tubal dilatation.

There are many points of interest in the treatment of these cases. But here, again, a complete appreciation of all the facts of a case and an exact diagnosis therefrom is of the first and greatest importance.

These cases are met with in increasing frequency as we descend the social scale. A fuller knowledge of them will enable us to treat our cases of "delayed resolution" a good deal more seriously, to keep chronic pulmonary catarrh under as close and continuous supervision as possible. If we diagnose bronchiectasis, the most serious event for such a case is secondary infection by pyogenic organisms. The crowded air of cities is sure to bring this about in time, yet by prophylactic measures we can ward it off for a considerable period, or even indefinitely.

But what we want in studying chronic cases of this description is a very much greater number of reliable case-histories than we at present possess. And it is to the general practitioner that we must look for these, for he has the opportunity of observing cases over a number of years. We *assume* that a certain considerable proportion of these cases recover. We *prove* it but rarely. What we require is cases in which the physical signs have been carefully and continuously noted and correlated with the symptoms. Then, if a case gets well, the records will be of the greatest value.

THE HEATING OF MILK AS IT AFFECTS THE NUTRITION AND HEALTH OF THE INFANT.*

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THE heating of milk given as food may produce an effect on the infant's nutrition and health in two ways: Firstly, it may alter the physico-chemical character of the milk either for better or worse as regards its suitability to the needs of the infant economy, and secondly, it may affect the adventitious bodies existing in milk, namely the micro-organisms and their products, with a consequent change in their physiological or pathological action. It is with the first of these two ways that the present paper is chiefly concerned, and for descriptive purposes the changes coming under this head may be divided into three main groups.

In the first place there are the obvious changes which occur when milk is heated in an open vessel, namely, an alteration in the taste, an alteration in the colour, and the formation of a skin or scum on the surface. The alteration in the colour and taste is due (in part at least) to the action of heat on the carbohydrate lactose, leading to the formation of small amounts of caramel, and, eventually, traces of formic acid. The characteristic taste is acquired with some suddenness at about 70° C., and gradually disappears if the milk is well cooled after boiling. The formation of a skin is a phenomenon not in any way peculiar to milk, but occurs in any emulsion in an albuminous medium. Jamison and Hertz† carefully investigated the whole matter in 1901, and found that it was due to the drying of the caseinogen on the surface of the milk; globules of fat are entangled in the dried protein, and if the temperature is raised above the coagulation point of the lactalbumin this substance is also involved in the formation of the skin. No skin appears if the milk is heated in a closed vessel, and if the air over its surface is kept saturated with water vapour. The net result of this group of changes is not great as regards the value of milk as a food either for infants or adults. At most an infinitesimal quantity of lactose is destroyed and a small amount of protein thrown out of solution.

The second group of changes, which are less obvious and only demonstrable by careful experiment, produces far more important

* A paper read before the Bristol Medico-Chirurgical Society, February 10th, 1909

† 'Journ. of Physiology,' vol. xxvii, p. 26, 1901.

results. The boiling, by removing carbon dioxide from the milk, renders the calcium salts less soluble, with the result that the coagulation of the caseinogen by rennin is rendered less rapid and complete. Cantley,* who made a number of experiments on this point, showed that the coagulation by rennet and the precipitation by dilute acids were both adversely affected. The curd is softer and more flocculent and forms more slowly the longer the milk is heated and the higher the temperature is raised. This soft curd might be of advantage to infant digestion, but there are two further points to be considered. Leeds and Davis and also Koplik† found that heated milk was less easily coagulated, but that it was also less easily hydrolysed by pepsin and trypsin, and further, Hutchison has shown that the addition of an acid prevents the precipitation of the calcium salts, so that possibly in the stomach a hard, firm curd is formed owing to the action of gastric juice.

The heating of milk, especially if prolonged, destroys in all probability some of the lecithin, and increases the proportion of inorganic to organic phosphorus. The phosphates are also largely precipitated.

The physiological effect of these less obvious changes is shown in the results obtained by various observers. Rink found that consequent on the alteration in the proteins the fat globules were less perfectly emulsified and were less easily absorbed. Vasilieff experimenting with young men, Koplik with infants, and Weber‡ with young calves showed that the nitrogenous constituents of milk were less completely absorbed when the milk had been heated. In older children (two and a half years), however, Bendix found that there was little difference in the absorption of boiled and unboiled milk. Thus, though the evidence is not quite unanimous, on the whole it seems probable that heating does render the absorption of the proteins and fats in milk less complete. Hutchison§ details experiments showing that boiled milk takes longer to pass out of the stomach than fresh milk, but he admits that observers are not all agreed on the point, and that personal idiosyncrasy seems to play some part in the matter.

The exact physiological effect of the changes taking place in the phosphorus as a result of boiling is not yet determined, but it is possible that it may be of considerable importance. Gaglioni|| has

* 'Feeding of Infants,' London, 1897, chap. xiii.

† Quoted by Cantley, *op. cit.*

‡ Quoted by Cantley, *op. cit.*

§ 'Principles of Dietetics,' second edition, London, 1901, p. 118.

|| 'Rev. di Clin. Pediat.,' March, 1903.

shown that boiling precipitates both organic and inorganic phosphorus, and that the latter is increased at the expense of the former. There is evidence that the organic compounds are more easily and completely absorbed than simple inorganic phosphates, and their diminution in cow's milk would seem to be particularly disadvantageous, seeing that (like the milk of other animals whose young are born with a fully developed nervous system) it is particularly poor in lecithin bodies. The new-born infant, with its nervous system still very imperfectly developed, requires a milk comparatively rich in organic phosphorous compounds, such as human milk is found to be.

We can now pass on to the consideration of the third group of changes, which are, perhaps, the most important of all, though they are so elusive that they cannot at present be recognised by ordinary chemical or physical methods. It includes all those changes which are due to the death of the cells contained in milk, and to such alterations in the soluble proteins as deprive them of what is known as their "vital properties."

In the first place certain enzymes, which are presumably of value to the young animal, are destroyed, as also are such bodies as precipitins and agglutinins which exist in fresh milk. The phagocytic power of the leucocytes is also, of course, abolished.

Another property of milk which is lost after heating is its so-called "bactericidal action." This was first studied by Fokker* in 1890, and has since been the object of a considerable amount of research. Two recent papers of importance are those of Myer Coplans† in 1907 and Rosenau and McCoy‡ in 1908. Coplans showed that the growth of a laboratory strain of *Bacillus coli* was inhibited by new milk for six hours absolutely, and for a further eighteen hours partially at air temperature. At body temperature the first period was reduced to one hour and the second to two hours. If the milk was cooled to 0° C. for twenty-four hours, and then raised to air temperature, the period of inhibition was not so much shortened as when it was raised to 32° C. initially, the actual periods being three to nine hours for total and partial inhibition respectively. Boiling the milk for an hour on two successive days entirely abolished this phenomenon.

The results obtained by Rosenau and McCoy are very similar to those of Coplans. They consider the action inhibitory rather than

* 'Fortschritte der Med.,' 1890.

† 'Lancet,' 1907, vol. ii, p. 1074.

‡ 'Journ. Med. Research,' vol. xviii, p. 165, 1908.

bactericidal and show that it is not solely or mainly due to phagocytosis, as equally well-marked results were obtained from cell-free milk. As regards temperature they found that ten minutes' freezing had no effect, and even forty-eight hours at $0^{\circ}\text{C}.$ had only an uncertain action. Boiling or heating above $80^{\circ}\text{C}.$, however, always destroys the inhibitory action, while in certain cases a temperature of $60^{\circ}\text{C}.$ or $55^{\circ}\text{C}.$ may materially reduce it. A review of the literature given in their paper shows that the action on different bacteria varies, and that the milks of different animals or of the same animal at different times may show great variations in inhibitory power.

This property is no doubt of considerable importance in its relation to the use of milk as an infant food, especially in view of the numerous disturbances caused by the growth of bacteria in the intestinal canal. Clinical evidence, however, always carries more weight than merely experimental deductions, and from this standpoint we may note that there is a growing tendency to condemn the heating of milk intended for infants' food. Finkelstein* in Vienna, Daniloff† in Russia, and others have recently investigated the question, and have all come to the same conclusion as regards the great superiority of fresh milk. Sill‡ investigated 179 consecutive cases of children carefully fed on pasteurised and sterilised milk, and found signs of rickets or scurvy in 97 per cent. Budin and his followers stand almost alone in advocating the prolonged heating of milk, and even Variot,§ though he found no cases of scurvy or rickets among 3000 children fed on milk sterilised at $100^{\circ}\text{C}.$, admits that anæmia and constipation occurred, and that 3 to 4 per cent. of the children could not take the heated milk at all.

The late Dr. Ashby|| said that in cases of suppurative pyelitis in children there was frequently a history of the use of sterilised milk, and Dr. Edmund Cautley¶ has recorded the same opinion. As regards scurvy it appears at any rate certain that some constituent in the milk which is destroyed by heating is an important factor in its prevention. Dr. Coutts** has recorded three cases of infantile scurvy which failed to recover on ordinary anti-scorbutic diet as long as the pasteurised milk was continued, but which

* 'Wien. med. Woch.,' vol. xlv, 1907.

† Abstract 'Archives of Pediat.,' vol. xx, p. 560, 1903.

‡ 'Med. Rec.,' 1902, p. 1016.

§ 'Comptes Rendus acad. des Sciences,' tome cxxix, No. 23.

|| 'Brit. Med. Journ.,' 1907, vol. ii, p. 1638.

¶ 'Lancet,' 1908, vol. ii, p. 783.

** 'West London Med. Journ.,' 1906, p. 82.

rapidly improved as soon as fresh milk was given. I have elsewhere * expressed the opinion that in considering the ætiology of scurvy the personal factor must be duly recognised. The fact that of all children fed on cooked milk only a few manifest the classical symptoms shows that a special idiosyncrasy is essential for their production, and that probably others who show none of these symptoms are nevertheless adversely affected by being deprived of those "anti-scorbutic principles," whatever they may be, which are known to exist in fresh milk, and which possibly under such circumstances the infant economy is forced to manufacture for itself.

CASE OF EPITHELIOMA DEVELOPING IN THE SCAR OF A PLASTIC OPERATION FOR EXTROVERSION OF THE BLADDER.

By PERCY SARGENT, M.B., B.C., F.R.C.S.,

*Surgeon to the National Hospital for the Paralysed and Epileptic;
Assistant Surgeon to St. Thomas's Hospital.*

The following case, although it must be of extreme rarity, affords an addition to the many reasons which exist for abandoning the unsatisfactory plastic methods of dealing with extroversion of the bladder. It also illustrates in a striking manner the well-known factor of prolonged irritation as a precursor of cancer.

The patient was a man, aged 39 years, who came under my care in August, 1905, whilst on duty for Mr. Bernard Pitts, into whose ward he was admitted. Thirty-five years previously Mr. Sidney Jones had performed a plastic operation for* the deformity, which was so far successful that the bladder had been covered in with skin flaps, there remaining only a small lateral sinus on either side, through which, together with the artificial urethral opening, the urine escaped. With the help of an apparatus the man had been enabled to get about in fair comfort, and to earn his living. For about twelve months he had suffered from pain, and a swelling developed around one of the sinuses. When admitted he presented, in addition to a foul cystitis, the condition which can to some extent be made out from the accompanying photograph. Complete epispadias was present, but both testes were descended. On each

* 'Brit. Med. Journ.,' 1905, vol. ii.

side of the flap which covered in the bladder was a sinus through which urine was leaking, but whilst that on the right side presented no features of any note, that on the left was surrounded by a ring of epitheliomatous growth of characteristic appearance.



The growth also extended downwards as far as the mesial opening, which represented the artificial neck of the bladder. Enlarged, hard glands were present in both groins. The case was considered quite inoperable and he left the hospital, but I am unable to trace his further history.

THE ORIGIN OF THE FEEBLE-MINDED.*

By W. A. Potts, B.A.Cantab., M.D.Edin., M.R.C.S.Eng.,
*Late Medical Investigator to the Royal Commission on the
 Care and Control of the Feeble-minded.*

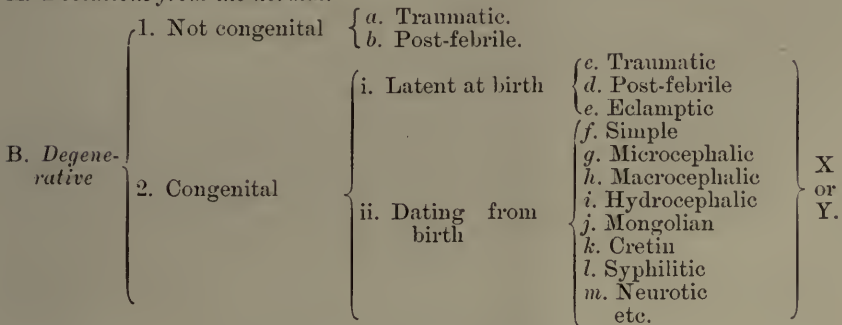
ALTHOUGH it is only three and a half years since I read a paper on the "Causation of Mental Defect in Children" in the Psychological Section at the Annual Meeting of the British Medical Association at Leicester, so much work has been done in the interval, and, in consequence of the recent Report of the Royal Commission on the

* Read at the Birmingham Branch of the British Medical Association, on March the 11th, 1909.

Care and Control of the Feeble-minded, so many important opinions and observations have become public property, that the present appears to be a suitable juncture for taking a fresh purview of the situation. In my paper at Leicester I put forward a scheme of classification of the feeble-minded, drafted on pathological lines. Further experience has shown that this is useful and sufficient, and I therefore now reproduce it, slightly modified.

CLASSIFICATION OF DEFECTIVE CHILDREN.

A. Deviations from the normal.



X = Insane or feeble-minded parent.

Y = Physically degenerate parent.

There are two classes: A, deviations from the normal, a term which explains itself; B, the results of degenerative changes. This second class is divided into non-congenital and congenital cases, and these are sub-divided into various types. It is scarcely necessary to say that the congenital group accounts for the great majority of cases seen.

The deviations from the normal have always been few and far between; a keener insight with extended knowledge of the factors which make for deterioration would seem to reduce this group still further, and the same applies to the non-congenital group of degenerative cases. The more scientific we become and the more we extend our knowledge, the more surely do we realise that nothing happens in this world without a reason. The production of the feeble-minded is no exception. It may not always be possible to recognise the rotten branch in the family tree, nor do we know all the agencies which make for decay, yet scientific reasoning and common sense both justify us in putting on one side Dr. Robert Hutchison's contention that the occurrence of feeble-mindedness is a "pure accident," a term which the Commission found themselves unable to interpret. The majority

of witnesses examined by the Commission were of opinion that a neuropathic inheritance is the great factor in the production of mental defect, and many of them brought forward facts in justification of their theory; a number, in a similar way, substantiated the idea that in the absence of a neuropathic inheritance the environment of the parents can and does tell; and in particular such elements as tubercle, syphilis, and excessive indulgence in alcohol. It is unfortunate that the Commission should have confounded the two issues and stated in their summing up that: "Both on the ground of fact and of theory there is the highest degree of probability that feeble-mindedness is usually spontaneous in origin—that is, not due to influences acting on the parent—and tends strongly to be inherited." Practically no one questions the latter statement, but the suggestion that feeble-mindedness is usually spontaneous is, in the opinion of many critics, not in accordance with the facts detailed; it is, at any rate, strangely discordant with the experience of those who have made a careful study of the effects of environment on the sperm and germ-cells, and on the developing embryo. A few words on the subject of "heredity" may not be inappropriate. I enter on this with some degree of trepidation after the strictures passed by the Commission on the loose and uncertain way in which, not only the lay, but also the medical witnesses, used terms in this connection. So impressed were the Commissioners with this weakness that they have suggested that heredity "forms an important part of physiology" which "should be more specially emphasised than it now is in the medical curriculum." A characteristic is not hereditary unless it is truly of an ancestral nature; to be so it must have been an inherent property through a series of generations, latent possibly in some, but still always really in existence, and always liable to crop up again. If a defective child is found to have had a father who drank to excess, owing to want of mental balance, a grandmother who was epileptic, and a great grandfather who committed suicide, we are correct in stating that there is a neuropathic inheritance. In many instances, however, in which we speak of a tubercular or alcoholic inheritance, we are using terms in their wrong sense; no doubt in many of these cases the disease or indulgence does exact its toll, and sometimes in the form of mental weakness in the next generation, but there is no true heredity here. What has happened is simply this; the sperm-cells of the father or the germ-cells of the mother have been exposed to a toxin, and have suffered in consequence; nor is this the only possible inaccuracy: in our population one in every nine dies of tuberculosis; there is

not really a history of special susceptibility to tubercle unless we know the total number of the family, and also the number of those who have been affected. When there have been, let us say, two cases of tubercular disease in previous generations, the statement has often been made that the family is phthisical; if more careful examination, however, showed that the family numbered thirty in all, and only two cases could be recorded, the correct statement of the facts would be, not that there is a family history of phthisis, but rather that the incidence of that disease in this family is below the average. The same remark applies to a history of mental illness; Professor Karl Pearson once pointed out to me that you can get a history of insanity, in the ordinary useless sense of the term, in any family, if only it is big enough. The point is always this: Is the incidence of the special condition above or below the average in the particular family? The biometricians have not yet carried everyone with them, but if they have done nothing else they have, at least, done yeoman service in the elucidation of the problems of heredity by making us accurate and precise in our statements. It is the old-fashioned slipshod method of recording family histories that makes some say there is nothing in heredity, and leads others to suggest that anything can be proved to be due to tubercle.

In determining the origin of mental weakness one great difficulty always confronts us: the cause of the trouble is seldom, if ever, single, but usually multiple, sometimes extremely complex. When phthisis, alcoholism, and insanity; not to speak of other unfavourable elements, are rampant in a particular family, who can say what determined the amentia; often it is not due to any single one of these, but to the unfortunate combination. The truth is that anything which interferes with mental or physical health tends towards the production of amentia. When Dr. Dewey, of Chicago, inquired into the early life conditions of 200 sane and 200 insane persons he found, according to Dr. Urquhart,* that, "whatever tended to eugenics found expression in the sane in a higher degree than the insane. For instance, excessive use of alcohol, of tobacco, of tea, of coffee appears more frequently in the insane families; tuberculosis, insanity, malarial environment follow the same rule. Neglect and poverty, lack of home discipline, defective schooling, were all more apparent among the insane." The term "blastophoria" or "germ corruption" suggested by Forel for anything that may injure the germ, and so lay the foundation for inherited weakness, is a convenient means of expressing all that leads to deterioration.

* Urquhart, "Morison Lectures," 'Journal of Mental Science,' 1907.

To return, however, to the main issue—I have said that a neuropathic inheritance is the outstanding feature in the records of the feeble-minded. This was shown fifteen years ago by Dr. Shuttleworth, who, in conjunction with Dr. Fletcher Beach, tabulated a series of 2380 cases admitted either to the Royal Albert Asylum at Lancaster or to the Darenth Asylum. Their investigations have since been confirmed by Dr. Tredgold, who studied a large number of cases, and in 150 obtained full particulars of the family for at least three, and sometimes four generations; in 64·5 per cent. he found a neuropathic inheritance. A similar inheritance was found by Dr. Lapage in at least 40 per cent. of the children in the Manchester Special Schools for the Feeble-minded. In the Special Schools in this city I investigated 165 cases, and in addition was supplied with particulars of 85 more by Dr. O'Connor, making 250 in all. We found a neuropathic inheritance in 45·6 per cent. In order to substantiate the contention that such a percentage does not exist among ordinary children, Dr. O'Connor and Dr. Coghill examined a group of 100 normal school-children in the same district, and found a very different state of affairs, there being a neuropathic inheritance in only 22 per cent. These control investigations are important and interesting; we found striking differences; not only were unfavourable antecedents much less common among the normal, but an even more noteworthy feature was that among the normal one unfavourable factor usually stood by itself, while among the defective was to be noted the summation of bad influences already described. In these cases mental weakness has become inherent in the germ-plasm. No difficulty in accepting this explanation arises from the fact that not all who bear the taint show the stigma; the wonderful capacity of Nature for restoring the normal is universally admitted.

When we consider the groups with tubercular and alcoholic antecedents we ask how these conditions are to blame if it is not a case of heredity. Those who would make light of their effects take refuge in Weismann's dictum that acquired characteristics cannot be transmitted. They are not transmitted in the ordinary sense of the term, but Weismann himself no longer maintains the inviolability of the germ-plasm; that is a tangible entity, and must have an environment with which it must have relations. Many important studies bearing on this point have been made in recent years; for my present purpose it is sufficient to refer to Beard's* investigations as detailed in his records entitled "A Morphological Continuity of Germ-Cells as the Basis of Heredity and Variation." Here Beard has shown us

* J. Beard, 'Review of Neurology and Psychiatry,' vol. ii, 1904.

that "everything which can influence the individual and its germ-cells—food, climate, toxins, disease, natural phenomena of all sorts—will differently affect the various corresponding characters of any germ-cell." He finds no element of chance in the production of varieties, but has demonstrated that healthy influences promote variation of a good type; unfavourable ones tend towards a bad type. The same views lead Forel to say: "The more pathological and inferior components there are in the vital forces of ancestors and parents the greater is the chance of having defective, abnormal and mentally diseased children. And, on the other hand, the more ancestors and parents are composed of normal or generally superior people the more capable will be the descendants they produce."

As regards tubercular antecedents, my comparative investigation showed that they were more than twice as common among the mentally defective, 43·2 as compared with 17 per cent. among the normal. Shuttleworth, Lapage and many others tell the same tale. We are not all agreed as to the sequence of events. Many hold that tubercle lays the foundations for mental weakness; others think, with Sir James Crichton-Browne, that: "The true connection is to be found in the fact that they are both apt to fasten on a particular kind of soil, weakly and little resistant to morbid effects." Be that as it may, any crusade against consumption will help to diminish the number of the feeble-minded.

(To be continued.)

Editorial.

INFANTILE MORTALITY IN POOR LAW INSTITUTIONS.

IN the Minority Report of the Royal Commission on the Poor Laws and Relief of Distress an account is given of a private inquiry, instituted by a member of the Commission, into the mortality statistics of the infants born during 1907 in the workhouses in England and Wales. Forms were sent out to all the unions in England and Wales, and of these a voluntary response was received from 450. The nature of these returns is so unexpected and so appalling that the greater publicity that is given to them the sooner is the state of affairs likely to be appreciated and a remedy found. We are very glad to see that the 'British Medical Journal,' in its issue of

February the 27th, has already taken notice of this grave matter. The following remarks from the Minority Report indicate the inquiries which were made: "We were, therefore, interested in the mortality statistics of the 8483 infants who were born during 1907 in the workhouses of the 450 unions responding to the inquiry made by one of our members. Out of these 8483 infants no fewer than 1050 actually died on the premises before attaining one year. The Registrar-General, as is well known, gives for the whole population the number of babies out of every 1000 born who die before the expiration of certain days, weeks and months of the first year of life. Similarly, there has been worked out for these 8483 babies born in 450 of the Poor Law institutions in England and Wales during 1907, taking only the deaths actually occurring in the institutions, the proportion dying within corresponding periods of their first year—making the assumption, for the purpose of comparison of death-rates, that those who left the workhouse within the year had a death-rate equal to those remaining in the institution."

The results of the investigation are tabulated in the following manner, and show that the mortality among the infants in the Poor Law institutions is between two and three times as great as that of all the infants born in England and Wales.

Infantile Deaths out of every 1000 Born.

Ages at death.	In workhouse outside London.		In London workhouse.		Experience of England and Wales, 1906 (legitimate and illegitimate).	Experience of London for 1906 (legitimate and illegitimate).
	Legitimate.	Illegitimate.	Legitimate.	Illegitimate.		
Under 1 month . . .	72·6	78·2	85·5	66·7	41·9	37·0
1 to 3 months . . .	72·8	85·9	57·1	116·2	25·7	24·6
3 to 6 months . . .	76·8	56·4	70·9	107·6	27·0	27·3
6 to 9 months . . .	30·8	28·7	48·9	72·2	20·8	21·7
9 to 12 months . . .	58·7	19·4	57·2	29·3	17·1	19·3
	311·7	268·6	319·6	392·0	132·5	129·9
Number of infants on whose experience from birth the above rates are based	1479	4421	1002	1581	—	—

The report also states: "Out of every 1000 babies born in the population at large, 25 die within a week and 132 are dead by the end of the first year. For every 1000 children born in the Poor Law institutions, 40 or 45 die within a week, and, assuming the mortality among those who are discharged to be the same as those remaining, no fewer than 268 or 392 will be found to have died by the end of the year, the number varying according to whether we take the experience of the Poor Law institutions for legitimates or illegitimates, in the Metropolis or elsewhere."

These results are astounding, for it would be natural to expect that the infant mortality would be higher among the whole population than that among those in the Poor Law institutions. Among the former class the lack of medical attendance, the inadequate nursing, the ignorance and neglect of the parents and the insufficient food, warmth and housing accommodation, would naturally lead to an excess in the infant mortality, and yet this loss of life is not nearly so great as in the institutions which are looked after by local authorities who are appointed to protect the interests of the poor.

An attempt is made to compare the infant mortality in the Poor Law institutions with that in certain voluntary maternity hospitals, and the result is compressed into the following foot-note: "The proportion of infantile deaths to the births during 1907 was, in the City of London Lying-in Hospital, 20·49 per 1000; in the East End Mothers' Home 21·07 per 1000; in the Queen Charlotte's Lying-in Hospital 26·1 per 1000; and in the General Lying-in Hospital 59·3 per 1000; or, taken together, out of 3414 births, 30 per 1000—to be compared with the 46 or 53 per 1000 recorded of the Poor Law institutions as a whole. In the well-known Rotunda Hospital at Dublin, out of 2262 births in 1906 there died in hospital only 30 infants; in 1907 out of 2318 only 21 infants. The usual stay in hospital is, however, apparently only seven days, so that the extraordinary small proportion of infantile deaths—13, or 9 per 1000—must be compared with the 25 per 1000 for England and Wales, and the 40·1 to 44·9 per 1000 of the workhouses for the first week."

Statistics are also quoted with regard to the mortality among 3005 infants, all of them born in West Ham in households having incomes of not more than twenty-one shillings a week, but born

under the care of the Plaistow Maternity Charity. Only 47 of these infants died within the first fortnight, or 15·33 per 1000 births, which may be compared with the 49·5 per 1000 births in the Poor Law institutions of London, England, and Wales.

The great excess of infantile mortality in the Poor Law institutions is due to many unsatisfactory conditions, which are indicated in the following extracts from the report: "Whatever allowance should be made for the fact that the Poor Law institutions received many cases in which the mother has been exposed to adverse conditions, it is impossible to avoid the conclusion that the arrangements of the workhouse nurseries—to which Dr. Fuller so pointedly drew our attention—need serious examination." "We regret to report that these workhouse nurseries are, in a large number of cases . . . wholly unsuited to the healthy rearing of infants. It is in vain that the Local Government Board has for more than a decade laid it down that: 'In every workhouse where there are several children too young to attend school a separate nursery, dry, spacious, light, and well ventilated, should be provided. . . . In no case should the care of the young children be intrusted to infirm or weak-minded inmates . . . ' We have visited many workhouse nurseries in different parts of the kingdom, and we have found hardly any that can possibly be regarded as satisfactory places in which children should be reared." "As things are, the visitor to a workhouse nursery finds it too often a place of intolerable stench, offensive to all the senses, under quite insufficient supervision, in which it would have been a miracle if the babies continued in health." "In the great palatial establishments of London and other large towns, we were shocked to discover that the infants in the nursery *seldom or never got into the open air*. We found the nursery frequently in the third or fourth story of a gigantic block, often without balconies, whence the only means of access, even to the workhouse yard, was a lengthy flight of stone steps, down which it was impossible to wheel a baby carriage of any kind. There was no staff of nurses adequate to carrying fifty or sixty infants out for an airing. In some of these workhouses it was frankly admitted that the babies never left their own quarters (and the stench that we have described), and never got into the

open air, during the whole period of their residence in the work-house nursery."

These statements are contained in the Minority Report of the Royal Commission—and can anyone conceive a more horrible state of affairs?

Provincial Societies.

ABERDEEN MEDICO-CHIRURGICAL SOCIETY.

March the 4th, 1909.

Three cases of Congenital Dislocation of the Hip-Joint reduced by the Lorenz Method were exhibited by Dr. ROSE. The ages of the patients (all girls) were 4, 6, and 13 years. In the case of the first two the reduction was easily effected, and the result, as regards position of the joint and ease in walking, all that could be desired. With regard to the third some difficulty was experienced in the reduction owing to the patient's age, and the result was not so good.

A case of Acute Bone Disease affecting the Head of the Femur was also shown by Dr. ROSE, which was operated on through a front incision, and giving a good result. He emphasised the need of early diagnosis in such cases if the result was to prove satisfactory.

MR. H. M. GRAY said in cases of congenital dislocation he used the open incision, and had operated in two cases with good result after the failure of the bloodless method.

MR. MARNOCH had also operated on a case that had been twice "cured" by the Lorenz method. The head of the bone was not in the acetabulum.

A case of Osteo-myelitis of the Jaw in a Boy, aged 10 years, was exhibited by Mr. J. SCOTT RIDDELL. The patient had pain in and swelling of the jaw three weeks previously to admission into the Royal Aberdeen Infirmary on January the 27th. There was marked periosteal thickening on the right side of the lower jaw. There were numerous sinuses in the gum from which pus discharged freely; the sinuses led down to a loose sequestrum consisting of three pieces. The front portion ($1\frac{1}{4}$ in. in length, and $\frac{3}{4}$ in. in depth) of the sequestrum was removed through the mouth on February the 6th, also a portion of the ramus—2 in. in length and $\frac{1}{2}$ in. in depth—was removed on this date. A third portion, representing the condyle, about an inch in length, was removed on February the 22nd. The result is exceedingly good at the present date, the boy having a useful jaw, with good movement. There is still, however, a small piece of necrosed bone left which appears to be the old angle of the jaw.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL
SOCIETY.

February Meetings.

A Boy, aged 13 years, with a considerable Residual Birth Palsy of the Upper Arm Type, was shown by Dr. E. F. TREVELYAN. There was considerable weakness of the deltoid in addition to the usual inability of carrying the arm upwards above the level of the shoulder. The arm notwithstanding was fairly useful.

A Meckel's Diverticulum removed from a Hernial Sac from an Infant, aged 3 months, was shown by Mr. H. LITTLEWOOD.

A Specimen of Pseudo-Membranous Colitis from a Child aged 4 years, who had suffered for a fortnight from whooping-cough, was shown by Dr. MAXWELL TELLING. The symptoms during life were very suggestive of intussusception and led to a laparotomy. Two days before admission there had been vomiting and diarrhoea, and the stools for the last twelve hours of this period had consisted of nothing but blood and slime. The child was admitted to the surgical side of the hospital, and *per rectum* a mass could be doubtfully felt which was thought to be the intussusception (? of the sigmoid); there was some prolapse of the bowel. Abdominal examination was negative. On opening the abdomen there was no abnormal condition discoverable. The child died a few hours after the operation and the colon was found to be in an intensely inflamed condition, commencing about the middle of its transverse portion and increasing in intensity towards the anus. The mucous membrane was swollen and looked as if covered with a reddish false membrane, which, however, could not be removed. No cause could be assigned for the colitis. The "mass" felt *per rectum* was undoubtedly the swollen mucosa.

An Infant, aged 18 months, in whom a large Pancreatic Cyst had been drained; some months before, was shown by Dr. MAXWELL TELLING and Mr. J. F. DOBSON. The wound was soundly healed and the child's condition in every way satisfactory.

A Child, aged 4 years, with Splenic Anæmia (Infantile) was shown by Dr. MAXWELL TELLING. There were marked signs of rickets. When seen a month before there was marked anæmia and cachexia; the spleen was massive, reaching to below the iliac crest; there was also considerable enlargement of the liver. The blood changes were typical. In a month the child had improved very greatly under iron and arsenic; the spleen had diminished by about one third, the anæmia, cachexia and general malaise were much less, and there had been a gain of five pounds in weight.

An Infant, aged 5 weeks, suffering from obstetric paralysis, was shown by Dr. T. CHURTON. The left arm was close to the side, the shoulder a little elevated, the forearm strongly pronated, the humerus a little rotated inwards and the fingers flexed. There had been rupture of the left sterno-mastoid muscle also at birth.

NORWICH MEDICO-CHIRURGICAL SOCIETY.

March Meeting.

A Case of commencing Facial Hemi-atrophy in a girl, aged 8 years, was shown by Dr. W. A. ALDRED, of Wroxham. When an infant the child had two "convulsion fits," but there had never been any injury to her head either at birth or since. She is one of seven, all fairly healthy, and there is nothing noteworthy in the medical history of her parents. She was quite well until last August, when she had a severe and recurring epistaxis. About four months ago the "hole in the head" was first noticed. For the last two months she has complained of sharp neuralgic pains over the right forehead, often accompanied by sickness, and according to her mother, causing temporary dizziness. She does not otherwise fall about. No optic neuritis. No alteration in eye movements or general reflexes. During the last month or two her mental condition has undergone a change. She has become stupid at school, nervous of the dark and rather silly in manner. Over the right side of the forehead there is a fan-shaped patch of discoloured, shiny and atrophied skin, such as is seen in scleroderma. There is no subcutaneous fat beneath it. The apex of the area is at the inner end of the eyebrow, and the base at the margin of the hair. It is sharply limited inwards at the middle line, but outwards it merges rather indefinitely into the rest of the skin. There is an irregular groove running into the hair, about half to three quarters of an inch in width, which is smooth, shiny and hairless, and its depression appears to be caused by absorption of the bone beneath. This groove runs directly backwards to the parieto-frontal suture. There is no alteration in the rest of her face, and sensation is good over the affected area.

Philadelphia Pediatric Society.

FEBRUARY the 9th, 1909, J. CLAXTON GITTINGS, M.D., President.

Inspiratory Dyspnœa in Infancy.

Dr. A. D. BLACKADER, of Montreal, Canada, read a paper, by invitation, on inspiratory dyspnœa during infancy, with special reference to congenital laryngeal stridor and so-called thymic asthma. He reported five cases of congenital stridor which had come under his observation, and called attention to the symptoms differentiating this affection from laryngo-spasm and also from the various forms of difficult or spasmodic breathing due to acute and subacute inflammatory conditions of the upper air-passages. He regarded the cause of the stridor as almost entirely mechanical and stated that in congenital laryngeal stridor we have to deal with an exaggeration of the normal infantile type of larynx due to defective developmental conditions and not

dependent upon any spasm or inco-ordination of the respiratory muscles. The stridor itself appeared to be due to the vibration of the ary-epiglottic folds, which on sudden and deep inspiration become sufficiently tense to give a high note; the character of the sound was variable and was dependent partly upon the condition of the folds themselves, partly on the amount of stenosis present, and partly on the degree to which the membranes were stretched. Of the total number of cases, including his own, in which the age is recorded, he finds that 64 per cent. occurred during the first week and 28 per cent. during the second week. The delay in appearance may be attributed either to defective observation on the part of the nurse or defective inspiratory power on the part of the infant. In one of his cases another child in the family was said to have died at the age of four months from an attack similar to the one then experienced by the infant in his charge. Refslund states that a similar condition was also present in the brother of the infant that died under his care, but Cerf in his review states that he does not know of any other instance where a possible hereditary influence manifested itself. Thomson does not consider the affection as one of serious import to life; nevertheless one sixth of the cases reported have died of affections of the respiratory system. In all cases, except the very mildest, we find distinct indications of impediment to the entrance of air manifesting itself in defective expansion of the air-cells at both bases, a condition which must predispose to acute disease, and one also which tends to retard normal growth and development.

In cases with severe suffocative attacks the possibility of a fatal obstruction must be considered by the physician. Such cases should be sent into a hospital, where any sudden emergency could be quickly met, and kept there till the danger lessens with advancing age and development.

The question of the amount of influence that an enlarged thymus may, during infancy, exert on the respiratory act in the production of dyspnoea and stridor has for a long time interested the profession. Pathologists generally have questioned the possibility of an enlarged thymus exerting direct pressure on the trachea. A few cases, however, have been reported within the past decade where at the autopsy indications of distinct compression were found. Very recently, also, Chevalier Jackson, of Pittsburg, has given us a convincing bronchoscopic demonstration of the occasional existence of such compression, a compression which in his case was relieved by resection of the gland. Compression may occasion distinct stridor, but such stridor will differ markedly in its character from that of congenital stridor. It has been described as of an unmusical, sawing character; it is present at both expiration and inspiration, is persistent, and is uninfluenced by sleep. Careful observation will also show that movement of the larynx is much restricted. Intense dyspnoea with cyanosis often develops. Compression by enlarged bronchial glands may give rise to very similar symptoms.

Dyspnoea associated with and apparently due to hypertrophy of the thymus is occasionally met with, without any actual stridor. Two cases of such severe dyspnoea with cyanosis ending in sudden death were reported. The question of the ætiology of such cases was discussed.

Dr. J. H. Jorson said that he had long been interested in the operative treatment of respiratory obstruction in infants. One case which he had seen in the Presbyterian Hospital, with continuous stridor, recovered. He had seen another case. This patient had the classical symptoms of congenital laryngeal stridor coming on at the age of three weeks. Another child had died of congenital heart disease, but aside from this the family

history was good. The condition in this child was so acute at times, especially when she was excited or disturbed, that operation was seriously considered, and Dr. Jopson was in almost constant attendance for days. The child was finally taken to the mountains and ultimately made complete recovery. It is noteworthy that these cases often succumb to other respiratory infections. A distinct malformation of the larynx is apparently found when these cases come to autopsy. In a large group of cases, difficult to distinguish from thymic asthma, rickets or adenoids are usually present, together with some additional acute infection, as influenza. He mentioned a family of children, in all of whom laryngeal obstruction occurred at some time during infancy.

Dr. J. P. CROZER GRIFFITH has been most interested in thymic death. He agrees with Dr. Blackader that some cases have had stenosis follow pressure of the thymus gland, with sudden death, with symptoms of laryngismus stridulus. But children with a large thymus may die of something else, even suddenly. Dr. Griffith says that status lymphaticus does not kill; the enlarged thymus is not the cause of death, but some neurosis or some cardiac action.

Dr. B. F. ROYER has seen no case as young as two weeks. He saw a child of five months who had recovered from laryngo-spasm; later this child died very suddenly. Dr. Royer detailed the histories of several cases in which the exact diagnosis was obscure.

Dr. B. A. RANDALL said that the most germane case he had seen was that described by Dr. Jopson. In her his laryngeal mirror had given but a poor view; but it showed the enlarged varicose veins within, such as constituted the naevoid condition of the cheek and neck. On this account he advised the internal use of adrenalin, especially as a little adrenalin in the nose notably helped respiration. Laryngoscopy should be tried, although it often fails to show the parts below the narrow epiglottis, as this is the limit for palpation; for neuroses or even paralyses may occur in young children, as with the abductor paralysis seen in adults after typhoid. Severe dyspnoea must be relieved without too much delay, lest, besides carbon dioxide intoxication, clot may form in the heart or pulmonary artery with sudden death. In these cases, as in diphtheria, mercurial fumigations with calomel may aid much.

Dr. THEODORE LE BOUTILLIER reported a case of laryngeal stridor in an infant, aged 5 months. He had had a laryngeal cry for some months, associated with rickets and craniotabes. The stridor was noted again at seven months, when the child died suddenly, with cyanosis, after increasing stridor.

Dr. D. J. MILTON MILLER spoke of an infant with laryngeal stridor who had been under his care for three months. As the child grew stronger the stridor decreased markedly. He sees very little resemblance between laryngeal stridor and thymic asthma, and they should not be confused. He does not believe that the symptoms of laryngeal stridor are due to pressure of an enlarged thymus. If they were it would be a more frequent affection, as enlarged thymus gland is very common, at least comparatively so. He believed the dyspnoea of enlarged thymus was due to the same cause as thymic death—to a toxin.

Dr. C. B. FARR said that he had seen a child, aged 8 years, in whom the thymus weighed 30 gm. and the heart 70 gm. There was general enlargement of all the lymphoid structures and slight hypostatic congestion of the lungs. Onset was sudden, with coma, convulsions, leucocytosis 45,000, hyperpyrexia, and death.

Dr. S. McC. HAMILL spoke of a form of laryngeal obstructive breathing, which he had observed in association with certain infections in newly-born and young infants. He referred to it because of the statement which Dr. Jopson had made relative to the increase he had noted in the stridor of infants suffering from congenital laryngeal stridor in the occurrence of super-added infections. He believed there was little likelihood of the obstructive breathing of the type referred to being confused with the congenital laryngeal stridor, but he had observed instances in the infections of the newly-born which might very readily be confused with the so-called thymic asthma. In these cases the onset of the spasm had been acute, severe, and associated with marked cyanosis, sometimes resulting in sudden death, after these symptoms had existed for a comparatively short time. He had sometimes observed at the post-mortem examination of these cases quite marked enlargement of the thymus gland, but in no instance was there evidence of the gland producing sufficient pressure to account for the symptoms. That they were not dependent upon the presence of an enlarged thymus he had demonstrated by frequent autopsies in cases in which there was no enlargement of the thymus. In one very striking case of streptococcal infection in a newly-born child, he had observed the complete cessation of the obstructive breathing and the disappearance of the cyanosis during the process of removal of 2 c.c. of blood for purposes of bacteriological study. This made it evident that there was no association between the presence of an enlarged thymus and these obstructive manifestations. On the contrary, these facts point to an infectious origin. But he was unable satisfactorily to explain the manner in which such infections brought about these results. He referred to the case of a marasmic infant which he had observed within the past two days, which, after having remained in a stationary condition for some weeks, suddenly developed what seemed to be obstructive breathing, associated with a certain amount of stridor, but without cyanosis, and associated with a very marked drop in the temperature; and thereafter a marked fluctuation of the temperature occurred between the normal point and 95° F. The obstructive breathing persisted until the time of death, which occurred suddenly; but the autopsy showed nothing to account for the peculiar type of breathing. Cultures from the heart blood, however, yielded a pure growth of a staphylococcus. This emphasises still further the fact that these manifestations may depend upon infectious conditions which are not associated with a rise in temperature, and without symptoms that would throw any light upon the nature of the condition. He thought further that these cases suggested the possibility of an infectious or toxic origin of thymic asthma.

Dr. R. S. McCOMBS reported a case in a child convalescing from typhoid fever at the Children's Hospital who developed a sudden attack of laryngeal obstruction accompanied by cyanosis and symptoms of asphyxia. He intubated, the tube remaining in position for three days; when it was removed there was no reappearance of symptoms. A curious accident occurred during intubation, the obturator holding the intubation tube in position being found missing after intubation. The child did not pass it in the stools, it was not in the bed-clothing, nor was it ever found. Dr. McCombs thought it possible that the obturator had slipped through the tube into the trachea.

Dr. W. M. L. COPLIN said that the weight of the thymus gland does not show its possible pressure. The shape of the gland may show compression on the trachea. The gland also differs, whether it is distended or not.

Dr. C. E. DE M. SAJOUS called attention to a cause of laryngeal obstruction in adults, a swelling of the tissues on the under side of the larynx, thus causing the laryngeal aperture to become narrowed. This is sufficient at times to require tracheotomy, as in a case reported by Lecoarret in 1894. The subglottic region being prone to hyperæmia and œdematous infiltration in adults, especially during the use of the iodides, it must be the seat of corresponding disorders in children. This cause of asphyxia may have prevailed in some of the fatal cases referred to this evening.

Dr. BLACKADER, in closing the discussion, called attention to the fact that in pure congenital stridor there was little or no spasm, a condition which differentiated it from laryngismus stridulus. He admitted that those cases of sudden death in which an enlarged thymus had been found without other detectable pathological condition might eventually prove to be cases of general infection.

Abstracts from Current Literature.

Medicine.

The appendix in scarlet fever (*Thèses de Paris*, 1907-1908, No. 149).—**R. Kauffman**.—Autopsies show that the appendix presents constant lesions in scarlet fever which are due to the affinity of the scarlatinal poison for lymphoid tissue. Macroscopically the lesions consist in a vascularisation of the appendix and enlarged glands in its mesentery, and microscopically in intense folliculitis and periadenitis. Clinically, the manifestations are often very slight, but can sometimes be found by a methodical examination of the abdomen. Kauffmann suggests that the vomiting which is a constant symptom of the onset of scarlet fever is due to a lesion of the appendix, and that many cases of malignant scarlet fever are really cases in which scarlet fever is complicated by an unrecognised appendicitis. Typical appendicitis may occur during the febrile period or during desquamation. Many cases of family appendicitis are probably post-scarlatinal. The thesis contains thirty-one cases, of which eighteen have hitherto been unpublished.

J. D. ROLLESTON.

Chronic appendicitis in children (*Bull. et mém. de la Soc. méd. des Hôp. de Paris*, 1908, p. 845).—**J. Comby**.—Appendicitis is very rare in infancy, but becomes more and more frequent as the child grows older, and is common after five years. It is essentially a chronic disease in which the acute form is only an episode. The ætiology is often obscure. Fine, well-nourished children, without any previous digestive troubles, are suddenly seized with appendicitis. Heredity, family predisposition, lymphatism, and arthritism are incriminated in such cases. In others there may be adenoids, tonsillitis, otitis media, cervical adenitis, gastro-enteritis or muco-membranous entero-colitis. Among infectious diseases influenza plays an important rôle in the ætiology. Typhoid fever comes next and then scarlet fever, measles, mumps, varicella and, generally speaking, all the specific or non-specific infections which in the child more than in the adult cause an overgrowth of the lymphoid tissue. The symptoms are variable and complex. Cyclical or periodic vomiting with or without acetoneuria in most cases is a

symptom of chronic appendicitis. The prognosis should be guarded. It is impossible to count on a spontaneous cure. Surgical intervention is required in most cases. The paper ends with a brief summary of 105 instructive cases.

J. D. ROLLESTON.

Lobar pneumonia in young children (*Thèses de Paris*, 1907-1908, No. 307).—**J. Lorne**.—This thesis contains the histories of seventeen cases of lobar pneumonia in children, whose ages ranged from $7\frac{1}{2}$ months to $2\frac{1}{2}$ years, including two personal cases from Marfan's clinique at the Hôpital des Enfants Malades. Lorne arrives at the following conclusions: Lobar pneumonia in young children was once considered very frequent, but later its existence was denied. At present authorities are agreed that it exists, but regard it as rare before the age of two years. The temperature curve is the best guide during life to the diagnosis of lobar pneumonia in young children. Lobar pneumonia in a young child presents almost the same characters as in an adult, but is distinguished by the absence of pain in the side and initial shivering, by the intensity of the digestive and nervous disturbances, and most of all by the late appearance of the physical signs. The prognosis is good. Complications are rare. The most frequent are meningitis, empyema and purulent pericarditis. The diagnosis must be made from pseudo-lobar broncho-pneumonia, pleurisy, meningitis and scarlet fever.

J. D. ROLLESTON.

Hereditary syphilis of paternal origin (*Thèses de Paris*, 1907-1908, No. 427).—**Monnier**.—Most syphilographers and pædiatrists regard transmission to the child of a purely paternal syphilis as a rarity, and some even deny its existence. The present thesis, which is inspired by Professor Pinard and is based on 95 observations of hereditary syphilis at the Baudelocque Clinique at Paris, purports to be a refutation of the prevailing doctrine. In only eight of the 95 cases was the mother syphilitic. In two both parents were syphilitic, and in 85 the father alone was affected. Though granting that syphilis may have been overlooked in some of the women, Monnier regards it as inadmissible that its presence should have escaped notice in 85 cases. In many of the cases the women had given birth to a series of healthy children and then to a series of abortions and dead and macerated children with a typically syphilitic placenta. On inquiry it was found that there was a different father for the second series.

J. D. ROLLESTON.

Morphia in laryngeal diphtheria (*Tribune Médicale*, 1908, p. 213).—**A. Lesage** and **M. Cléret** think that the use of morphia in infants and older children is far from being so harmful as it is said to be, and that many of the fatalities imputed to morphia were due to opium and its preparations. In laryngeal diphtheria the attacks of suffocation are due as much to spasm as to the mechanical obstruction caused by the presence of membrane. Children with threatening asphyxia are given a hypodermic injection of 1 in 100 solution of hydrochloride of morphia in doses of $\frac{1}{4}$, $\frac{1}{2}$ or $\frac{1}{3}$ c.c. according to their age. A few minutes later antitoxin is injected. In the great majority of cases the child goes to sleep at once for five to six hours, during which time the serum acts, and on awakening the child is almost well. In a few cases morphia does not produce immediate relief and intubation is required. Morphia is nevertheless given, for it reduces the length of stay of the intubation tube. The chance of serious laryngeal

injuries is thus diminished. **E. Ausset** (*La Pédiatrie pratique*, 1908, p. 109) testifies to the value of this treatment by recording two cases, one of simple laryngitis and the other of diphtheritic laryngitis following measles, in which the injection of morphia rendered intubation unnecessary.

J. D. ROLLESTON.

Pleurisy in scarlet fever (*Thèses de Paris*, 1907-1908, No. 340).—**L. Rogery**.—Pleurisy in scarlet fever is relatively uncommon. Its frequency is greater in some epidemics than in others. It may occur at any period of the disease, but is most frequent during desquamation. It is rarely primary, but is most frequently secondary to otitis, rheumatism or bronchopneumonia. The effusion may be sero-fibrinous, but is much more frequently purulent. The *Streptococcus pyogenes* seems to be the only pathogenic agent. The onset of sero-fibrinous pleurisy in scarlet fever is insidious, but later the infusion increases rapidly. The prognosis is almost always good. Empyema on the other hand is associated with symptoms of pyæmia from the start. The prognosis should be most guarded. The treatment of scarlatinal pleurisy does not differ from that of other pleurisies. The thesis contains the histories of twenty-one cases, seven of which hitherto unpublished are from Richardière's scarlet fever block at the Hôpital des Enfants Malades.

J. D. ROLLESTON.

Treatment of diphtheria (*Wien. klin. Woch.*, 1908, pp. 1046 and 1095).—**D. Pospischill**, in dealing with late or malignant cases, advocates the use of large doses of serum (30,000 to 40,000 units), its local injection, *i. e.* at the angles of the jaw, and the free use of adrenalin, both subcutaneously in association with normal saline solution and by mouth. Though adrenalin does not have the curative effect of antitoxin, it helps to tide the patient over the critical period. In some cases he employed adrenalin continuously for weeks, and in others renewed it frequently during attacks of cardiac failure. Occasionally abscess formation occurred at the site of the adrenalin injection, but glycosuria was never observed. To save the heart unnecessary strain Pospischill recommends morphia for the restlessness characteristic of toxæmic cases, and also in descending croup where tracheotomy has failed to give relief. In such cases life is prolonged, and may sometimes even be saved.

J. D. ROLLESTON.

The infant's cry (*La Clin. Infant.*, July, 1908, p. 440).—**M. Carrière** has made an interesting study of this subject. The cry may be physiological, as the cry at birth and the cry of hunger. The starved infant makes little urine and is constipated. Cries of pain are specially due to dentition. Some children are naturally criers, but this diagnosis must not be made until all physiological and pathological causes have been eliminated. Erythema of the buttocks causes a child to cry until the parts have been cleansed and soothed. Search should be made for abscesses, suppuration of the cord, mastitis, etc. The bones and joints should not be overlooked, as seats of pain and torticollis should not be forgotten. If crying occurs on feeding examine the mouth and throat. The most frequent cause of crying is to be found in gastro-intestinal disturbances. The cry of dyspepsia occurs in paroxysms and ceases after expulsion of flatus; that of hyperchlorhydria occurs after feeding and ceases two hours later, and is calmed by bicarbonate of soda; that of hypochlorhydria occurs later at the end of digestion and continues during the night after the last feed; it is made

worse by giving more milk and calmed by weak hydrochloric lemonade. Dilatation of the stomach is painful and only calmed by copious vomiting. In dyspepsia due to excess of Lab-ferment the pain is continuous, occupies the whole period of digestion, and commences immediately after feeding. If the stomach is not at fault look to the intestine and for worms, not forgetting simple colic, which is calmed by one or two drops of belladonna, nor overlooking the possibility of strangulated hernia. In relation to micturition look for phimosis, erosions of the vulva, small uric acid or phosphatic calculi. Vesical spasm and renal colic are not rare. Pain in the ear is worse when the infant is laid down and when the head is moved; a few drops of 1 in 10 warm carbolised oil, or 1 in 100 cocainised oil, give relief. The cry of pleurisy accompanies cough; that of peritonitis is exaggerated by respiratory movements, defæcation or exertion; the cry of meningitis and hydrocephalus has special characteristics. Lastly, certain cries, periodic and nocturnal, are symptomatic of malaria, Pott's disease, and night terrors.

VINCENT DICKINSON.

The interpretation and prognosis of periodic vomiting in childhood (*'La Pediatria,' June, 1908, p. 448*).—Those who are interested in this subject will find at the end of **O. Cozzolino's** suggestive paper one of the fullest bibliographies hitherto published. From his personal investigations and reported cases the author arrives at the following conclusions: (1) Attacks of periodic vomiting, even when they seem to constitute the whole illness, form a syndrome the cause of which must be sought for in each individual case. (2) In the majority of cases it seems well established that a neuro-arthritic diathesis represents a predisposing factor of indisputable importance as shown by its occurrence in families, but considering the enormous frequency of such an hereditary diathesis compared to the marked rarity of cases of periodic vomiting, there must be some exciting cause such as a gastro-intestinal auto-intoxication in the widest sense of the term. (3) There are sufficient reasons, *i. e.* the analogy of exciting factors, the existence of old cases of periodic vomiting, or of single attacks, the periodic type sometimes observed in the vomiting of peritonitis, appendicitis, acute infections, etc., to justify the hypothesis that it is not opportune to differentiate in a hard and fast manner these periodic vomitings from ordinary vomitings such as occur for instance in acute indigestion. Neither the intensity, long duration, periodicity, nor accompanying acetonæmia can be held as constituting fundamental characteristics of differentiation. (4) The conception of a gastric neurosis is intimately connected with intestinal auto-intoxication in explaining the phenomena which give so characteristic a stamp to this kind of vomiting, and this conception finds an adequate substratum in disturbances of metabolism in relation with the arthritic diathesis. (5) The termination of such periodic vomiting, usually favourable notwithstanding the urgency of the vomiting, may sometimes be fatal during the attack itself. In all the cases in which there was an autopsy marked lesions of the digestive track and fatty degeneration of the liver were found. (6) The morbid appearances, and also the acetonæmia, lend support to the auto-toxic gastro-intestinal origin of cases of periodic vomiting. A full clinical report of three cases is given.

VINCENT DICKINSON.

A new disease: arrested development of the scaphoid in children (*'La Presse Médicale,' October 3, 1908, No. 80, p. 634*).—**Romme** draws attention to a memoir just published by Alban Köhler (*'Münch. med.*

Wochenschr., 1908, No. 37, p. 1923), and gives radiographs of three boys affected in this way between the ages of five and nine years. The disease had lasted for six weeks, and consisted of pain in the dorsum of the foot in the situation of the scaphoid. In one boy it occurred in both feet and also in the knees in the patellar region, and was present not only during the day on walking or standing but also at night when the child was in bed. Examination of the foot showed nothing abnormal except that pressure over the scaphoid caused intense pain. There was no sign of rickets and the children were well developed. In all three radioscopy showed a lesion of the scaphoid, the bone, on comparing with the healthy side, being singularly small, twice to four times as small as normal. Its outline was irregular, the cortical and cancellous layers were indistinguishable, and the whole bone seemed dark as if laden with lime salts. The same condition existed in the patella. A system of rest from severe exertion effected a cure. The disease seems to consist of a transitory arrest of development of the scaphoid and patella, but the reason why these bones alone should be affected is obscure.

VINCENT DICKINSON.

Observations on 325 cases of scarlet fever (*Montreal Med. Journ.*, September, 1908).—**McCrae** reports out of a series of cases that the age incidence was as has been previously reported, only three occurring in the first year of life, and the largest number were between three and four, viz. 10 per cent. The death-rate was 7 per cent. In one case a relapse occurred on the thirty-first day; in this the symptoms of the first and second attack were well marked and unmistakable. The symptoms appeared in the following percentages: sore throat 81, headache 54, nausea and vomiting 54, and all three together in 25 per cent. The face showed no rash in the majority of cases. In six the rash was hæmorrhagic, and three of these patients died. The throat was reddened diffusely in 80 per cent., and 20 per cent. showed membrane or fibrin in addition, and in six of these diphtheria was actually present, leaving 17 per cent. of all the cases in which membrane, not diphtheritic, was present. The strawberry tongue with its enlarged papillæ on the tip and edges is one of the most trustworthy signs. Glandular enlargement seems a weak diagnostic point; there was a general enlargement in 73 per cent., and of the cervical group only in 21 per cent. The fever exceeded 105° F. in 6 per cent. only, but of these seventeen cases ten died. Of the complications otitis media occurred in 25.5 per cent., generally appearing during the first or second weeks. There was a suppurative discharge in 17.5 per cent.; 21 per cent. had adenitis, 10 per cent. rhinitis. Erosion of the tonsillar artery proved fatal in one case. Myocardial degeneration seems fairly frequent, more common than endocarditis. A multiple arthritis occurred in 5 per cent., affecting mostly the larger joints. Albuminuria occurred in only 18 per cent. (fifty-six cases), blood in the urine thirty-nine times, and casts twenty-one times. Out of these only eight cases can be said to have definite nephritis. Four times a fleeting puffiness of the face was noted without albuminuria or other sign of nephritis. All cases were kept in bed on a milk diet for three weeks from the onset of the disease.

J. PORTER PARKINSON.

Treatment of cerebro-spinal meningitis by Flexner's serum (*Montreal Med. Journ.*, September, 1908).—**Finley** and **White** review the reports of previous observers, showing how the mortality from this disease has been lowered from 70 or 80 per cent. to about 30 per cent. by the intra-

spinal injection of Flexner's serum. They report five cases, of which four made an excellent recovery; in them the improvement was rapid, the temperature and pulse falling, and the other symptoms lessening in severity. The bacteria in the cerebro-spinal fluid rapidly lessened after the injections, and in four cases were never found after the first dose of serum. The leucocyte count showed a remarkable fall after the injections, often falling from 14,000 to 6000 on the day following the injection. The fluid is warmed and injected at the rate of 2 c.c. a minute under general anaesthesia, 10 c.c. being injected daily for three or four days. In the successful cases the treatment was begun on or before the third day, but in the fatal one on the fifth day.

J. PORTER PARKINSON.

Effects of faulty eye, ear, nose and throat conditions upon the mental development of school-children (*'South Calif. Pract.,' September, 1908*).—True believes that many a boy who gets on indifferently at school, getting a reputation for dulness or indolence, is prevented from going forward by imperfect vision, and its attendant evils, headache, vertigo, inflammation of the eyelids, etc. Defective hearing is a great barrier between the teacher's efforts and the child's receptiveness, and is the cause of much apparent inattention and stupidity on the part of the pupil. Through the nose and throat headache and difficulty of breathing induce to inattention and lack of mental application. In the examination of over 5000 school-children, 61 per cent. had defective eyesight, 22 per cent. were defective in hearing, 31 per cent. had adenoids, and 25 per cent. enlarged tonsils. Out of fifty dull children forty-three had some easily recognisable defect of these organs.

J. PORTER PARKINSON.

Chloroma of skull (*'St. Bartholomew's Hosp. Reports,' vol. XLIII, edited by H. Morley Fletcher and W. McAdam Eccles*).—A girl, aged 4 years, was admitted with a tumour of the skull and protrusion of the eyeballs. The post-mortem showed a multiple olive-green neoplasm in the bones of the skull, around the orbits, especially the right orbit, invading the sphenoidal fossa and antra of Highmore. The submaxillary lymphatic glands were enlarged and infiltrated with green-coloured growth.

JAMES E. H. SAWYER (Birmingham).

Cirrhosis of the liver in a boy, aged 9 years (*'Glasgow Med. Journ.,' February, 1908*).—Walter K. Hunter.—Boy, aged 9 years, who appeared healthy until nine months before his admission into the Glasgow Royal Infirmary in October, 1906. During that time he showed signs of listlessness and disinclination for any sort of physical effort, with loss of appetite and occasional attacks of vomiting. He had had whooping-cough at two years, scarlet fever at three and a half, and measles immediately afterwards. Child fairly well developed, but slightly jaundiced. The lower edge of the liver extended from the tip of the ninth right rib to that of the eighth left rib; it extended to two inches above the umbilicus. The spleen extended one inch below the left costal margin. The superficial abdominal veins were not enlarged, and there was no ascites. Mostly every day while in hospital there was some slight bleeding from the nose, and twice there was fairly abundant epistaxis. In August, 1907, the abdomen was larger, the superficial veins enlarged, and a considerable amount of ascites was present. The liver seemed to be about the same size. The ascites disappeared under treatment. In October there was a pneumonic consolidation of the lower

lobe of the right lung, and an empyema developed. He died two days after the operation for the empyema. The liver weighed 30 oz., and was about normal in size. Its shape was altered, the left lobe being distinctly larger than the right. The surface was definitely nodular, and the cut surface pale and of a yellowish colour. The spleen was much enlarged. Microscopical examination of the liver showed the condition to be one of very advanced multilobular cirrhosis. There was no definite fibrosis of the spleen.

JAMES E. H. SAWYER (Birmingham).

Hypogenetic nephritis (*Român. Med.*, No. 12, 1908).—**Mironescu** draws attention to a form of nephritis which appears to be due to a defective embryonal development of the kidneys. von Babesch and others have given to this form of nephritis the name "hypogenetic nephritis" on account of the fact that there is evidence not only of defective development of the glomeruli and blood-vessels, but also of the entire organ. Clinically, hypogenetic nephritis has usually a sudden onset, and is apparently caused by some mild infection. The heart rapidly hypertrophies and death frequently occurs from uræmia. At the necropsy the kidneys are found to be smaller than normal and present fœtal lobulation. The pyramids are small and diminished in number. Around the blood-vessels flat muscle-fibres are found, and there is a general increase of connective tissue in which mononuclear cells and fibroblasts of an embryonic character predominate. The condition is a rare one, but should be suspected in cases of chronic interstitial nephritis occurring in early life.

T. R. WHIPHAM.

Tubercular peritonitis (*Johns Hopkins Hosp. Bull.*, September, 1908).—**Hamman** gives an analysis of 150 cases of tubercular peritonitis which occurred at the Johns Hopkins' Hospital. On thirty-five cases a necropsy was made, and the following facts were established: (1) The great rarity of even apparently primary peritoneal tuberculosis, only one such case being found; (2) the great frequency with which more than one serous membrane is affected. In 29 out of the 35 cases there was, in addition to the peritonitis, pleuritis or pericarditis, or both. Of the cases that were discharged 43 were traced, and of these 14 had died, 7 were living but in bad health, and 22 were reported to be well. The statistics thus show that tubercular peritonitis is a very fatal disease. Of 103 cases that were either operated upon or examined post mortem, 35 were of the ascitic type, 63 of the fibrous, and 5 of the suppurative. In 70 per cent. of all the cases the leucocyte count was under 10,000, but a distinct leucocytosis was found in those that developed complications. Albumin was present in the urine in a majority of the cases, and in a few the diazo reaction was obtained.

T. R. WHIPHAM.

A case of primary nasal diphtheria in a suckling (*Wien. klin. Rundschau*, June 21, 1908).—**Schwarz** observes that the true nature of nasal diphtheria may be often overlooked at first, because, with nothing clinically to distinguish it from acute cold, there may be a negative bacteriological examination as occurred in the following case. An infant, aged 6 months, fell ill on December 1; it was somewhat restless and not taking its food. Temperature 37°, pulse 120, somewhat apathetic; nasal catarrh of moderate intensity with muco-pus secretion; breathing rather frequent with mouth open. There were no other signs. Bacteriological examination showed diplococci but no diphtheria bacilli. From December 2 to 10 condition changed only inasmuch as the secretion became more profuse; there was no

blood on examination. On the tenth day of illness the fauces and uvula were attacked. The Loeffler bacillus was now found to be present. Injections of serum were made, and the child was entirely well within a month of the attack.

M. D. EDER.

Urinary affection in infants (*Intercol. Med. Journal of Aust.*, June 20, 1908).—**Stephens** recommends in all obscure febrile cases in babies, especially baby girls, the passage of a soft rubber catheter and the examination of the urine chemically, microscopically and bacteriologically. He cites two recent cases in support of this. Case 1: A girl, aged 12 months, with fever but with no other physical signs whatever. The urine drawn off contained a small amount of albumin and some pus cells; bacilli in great numbers belonging to typho-colon group. The urine became normal in nine weeks. Case 2: A girl, aged 8 months, became febrile, languid, and vomited; there was some enlargement of the spleen but no other signs. The urine was found to contain motile bacilli belonging to the colon group. The child was well in a fortnight. He believes that in these cases the infection is an ascending one, and therefore directs special importance to the frequent cleansing and changing of diapers as the most potent means of prevention.

M. D. EDER.

Sudden death in an apparently healthy nursling (*Monatschr. f. Kinderheilk.*, VII, 6).—**Kaeszmann** reports a case of sudden death of a healthy nursling, in which the autopsy showed no cause for death; there was found no hyperplasia of the thymus or tendency to spasm. The only noticeable feature in the case was a peculiar vaso-motor neurosis in the mother (an erysipelatous erythema at the time of the menses) which perhaps indicated a vaso-motor abnormality.

J. E. BULLOCK.

Ætiology of impetigo contagiosa (*Arch. f. Hyg.*, Bd. 67, H. 4).—**Nako Abe** (Japan), in a small epidemic of this skin affection, describes a micrococcus which resembles the *Micrococcus aureus* and *albus*, and which produced typical impetigo pustules on the human skin. He considers this micrococcus the cause of the affection.

J. E. BULLOCK.

Notes on a scarlet fever epidemic in an institution for epileptics (*Correspondenzbl. f. Schweizer Aerzte*, M. 6, 1908).—The interest of this epidemic, reported by **Maeder**, lay in the occurrence of abortive cases with high fever, which were undoubtedly infectious, absence of angina, and an unusually localised eruption of short duration, in conjunction with cases of pronounced scarlet fever. The period of incubation was three to four days, and the illness was contagious in all stages.

J. E. BULLOCK.

Pathology.

A modification of the tuberculin skin-reaction (*La Pediat.*, September, 1908, No. 9, p. 641).—**V. Tedeschi** and **C. Lorenzi** describe the method of their auricular reaction. They state that the ophthalmic reaction is subject to the following errors and inconveniences: (1) Spasm of the orbicularis palpebrarum, which expels the drops as soon as they are instilled unless special care is taken to hold the eyelid open for some moments; (2) crying, which dilutes and washes away the instilled material;

(3) difficulty in estimating sluggish and delayed reaction; (4) the presence of the reaction in typhus and syphilis; (5) reaction on the part of those already suffering from eye disease, such as conjunctivitis, keratitis, and blepharitis. The authors use a small syringe of 1 c.c. capacity and of finer calibre than an ordinary Pravaz, and filled with an aqueous 5 per cent. solution of tuberculin. The helix of the child's ear is washed with alcohol and ether, and when the resulting hyperaemia has passed off the helix is straightened out with the thumb and forefinger, and a certain quantity of the fluid injected under the skin between it and the cartilage. The authors claim for their method that all the errors and dangers of the ophthalmic reaction are removed and there are no pathological conditions which can interfere with the test; that it has the advantage of eliminating doubts relative to scarification; it is safer than the methods of Pirquet, Lautier, and Hamburger; the quantity of tuberculin used, being dosimetric, constitutes a detail for the study of the reaction in relation to the weight and age of the subject and to the cutaneous susceptibility; the great practical advantage of being able to estimate with precision, owing to the anatomical structure of the chosen area, the subcutaneous swelling, which it is difficult to do in other dermo-reactions; the reaction is in every way more definite and is a new and striking phenomenon, due not only to the tuberculin but also to the special anatomical conditions of the helix of the ear.

VINCENT DICKINSON.

Bacteriological researches in measles (*Jahrb. f. Kinderheilk.*, Bd. 68, H. 4).—**Pacchioni** and **Francioni** have applied themselves to the much-studied question of the aetiology of measles; their researches have, however, met with no decided result. The *Bacillus haemophilus* found in the nasal and conjunctival secretions and in the blood they could only consider an occasional result. Probably in the light of Wright's opsonic theory the phagocytic possibility of the *Bacillus haemophilus* was intensified in measles. The authors think that the aetiology of measles is connected with the antibodies in the subsidence of the disease rather than with any definite bacillus.

J. E. BULLOCK.

Icterus gravis in the new-born (*Münch. med. Wochens.*, No. 42-43, 1908).—**Pfannenstiel**.—In some families there occurs a fatal form of severe icterus in the new-born. The condition shows itself in early occurring intense jaundice, in the tendency to serous transudation and to catarrh of the mucous membranes, followed by cutaneous hæmorrhages and swelling of the spleen. There is no evidence of syphilitic or septic infection. The author comes to the conclusion, as the result of his investigations, that this form of icterus is an exacerbation of physiological icterus. A collection of mild transitional cases was exhibited. The treatment, he states, must be directed to the destruction of the toxins by salt injections and stimulants.

J. E. BULLOCK.

Primary acute streptococcic peritonitis and its relation to angina tonsillaris (*Pathological Institute of the Helsingfors University*).—**de la Chapelle** considers that the result of numerous observations points to the direct connection of apparently primary peritonitis with angina tonsillaris; that the cause of this peritonitis is the *Streptococcus pyogenes*, and that infection of the peritoneum follows probably through the vascular system.

J. E. BULLOCK.

The cerebrum in infants with hereditary syphilis (*Jahrb. f. Kinderheilk.*, Bd. 68).—Neyl states that in six syphilitic infants dying in the first year of life, and examined by him, there was found a constant change in the cerebral cortex in the form of cell-infiltration and thickening of the pia mater, and a localised encephalitis of the cortex. When also in these cases, cerebral symptoms were intermixed along with other evidences of hereditary syphilis, a similar affection of the cerebrum was always found.

J. E. BULLOCK.

The Spirochæta pallida in the appendix (*Ann. de Mal. Vénér.*, 1908, p. 38).—Fouquet, whilst investigating the localisation of the *Spirochæta pallida* in congenital syphilis, found numerous spirochætes in the mucous and muscular coats of the appendix of a seven months fœtus. Numerous spirochætes were present in the other viscera also. The appendix showed no macroscopical nor histological lesion. This observation is of interest in that it confirms the opinion expressed by Prof. Gaucher in 1904, that syphilis, and especially congenital syphilis, is a common cause of appendicitis.

J. D. ROLLESTON.

Leucocytosis and iodophilia in scarlet fever.—(*Gazz. degli Osp.*, 1908, p. 433).—A. Magi.—During the invasion stage of scarlet fever there is a moderate leucocytosis, which reaches its maximum intensity during the eruptive period, and gradually declines to normal in convalescence. In complications such as necrotic angina, purulent otitis or suppurative adenitis the leucocytosis is high. The leucocytosis of scarlet fever is characterised by an excess of the polymorphonuclears. In most of Magi's cases the eosinophiles showed a moderate increase during the eruptive period, returning to normal in convalescence. The large mononuclears showed no change worth mentioning. The number of the red cells and the quantity of hæmoglobin during the course of the disease showed a slight but constant diminution. The iodophilic reaction was present in Magi's cases, and was closely associated with leucocytosis. Like the latter it showed its greatest intensity during the eruptive period, and diminished and entirely disappeared in convalescence, unless complications supervened. Owing to the constancy of its presence at the onset, its disappearance in convalescence, and its persistence on the supervention of complications, Magi thinks that the iodophilic reaction is of great diagnostic and prognostic value in scarlet fever.

J. D. ROLLESTON.

Therapeutics.

Inunction method of administering drugs to children (*Amer. Journ. of the Med. Sciences*, January, 1909).—B. K. Rachford, in the course of an interesting paper on the value of the inunction method of administering drugs to children, expresses the opinion that inunctions are very much more efficacious for the treatment of disease in young children than they are in adults, for the following reasons: (1) In infants the surface of the skin in proportion to the body-weight is four times greater than it is in adults. This brings the whole blood and lymph circulation of the infant in close communication with the blood-vessels and lymphatics of the skin, and makes it possible for drugs which are rubbed into the skin to pass quickly through the body and make their appearance in the urine, fæces, bronchial mucus, and other excretions. (2) In infants the vaso-motor mechanism is much

more responsive to reflex stimuli than it is in adults, and for this reason the capillary circulation in the skin of the infant is made much more active by the application of heat and friction, as in the giving of inunctions. This facilitates the absorption of the inunction and the ready introduction of medicines into the general circulation. (3) All lymphatic structures are functionally more active in the young child than in the adult, and the lymphatic circulation in the skin and in other parts of the body is relatively more active and functionally more important than it is in the adult. This facilitates the absorption of inunctions and makes possible the ready introduction of medicines through the skin into the lymphatic circulation. (4) In young children, and especially in infants, the nutritional problems in the treatment of all diseases are of vastly greater importance than they are in the adult, and it is, therefore, of the utmost importance that the stomach and intestinal canal should be kept in the best possible condition; consequently all drugs that can be advantageously administered in some other manner should be kept out of the stomach. This is especially true of drugs that are intended to influence general metabolism and to act upon diseased tissues remote from the gastro-intestinal canal. (5) The diseases which can be most readily reached by inunctions, such as diseases of the lymphatic structures and of the respiratory passages, are much more common and much more severe in young children than they are in adults, which facts very much enhance the relative importance of the inunction treatment in young children. (6) Experiments demonstrate that certain medicines may be introduced with great facility, by inunction through the skin, into the circulating media of the body, and that this result is more readily accomplished in infants and young children than it is in adults. He describes the technique he follows in the exhibition of drugs by this method, and he gives his experience with guaiacol, iodine, oil of wintergreen, salicylic acid, etc.

J. ALLAN (Edinburgh).

Treatment of common warts by local injection of tincture of thuya (*La Clin. Infant.*, November, 1908, No. 21, p. 670).—J. A. Sicard and P. Larne state that this method gives constant results. The patient is given a hot bath locally, sufficiently prolonged to soften the warty regions; then with antiseptic precautions, by means of a Pravaz syringe with a fine short needle, a few drops of the tincture are injected below the papillary layer of each wart. During the following days the warty mass becomes dark brown, withers and falls off, small ones in about a week, while very large ones require repeated injections from two to six times at five or six days' interval. After this operation, which is almost painless or may be made so by previous injections of coca-stovain, a dry dressing is applied.

VINCENT DICKINSON

Treatment of pertussis with the abdominal binder (*Therapeutic Gazette*, 1908, p. 615).—P. B. Cassidy, following Kihner's method of treating whooping-cough with the abdominal binder (*Journ. Amer. Med. Assoc.*, 1907, p. 1750), found that the duration of the disease was shortened, the vomiting checked, and the number and severity of the attacks reduced thereby. Twelve illustrative cases are recorded.

J. D. ROLLESTON.

Chloroform in whooping-cough (*Bull. de la Soc. de Méd. de Rouen*, 1907, p. 55).—Derocque.—A child, aged $2\frac{1}{2}$ years, suffering from whooping-cough, was operated on for acute mastoiditis. After the chloroform the

paroxysms almost completely disappeared, and the vomiting, which had been very frequent before, did not recur, though the case was followed for more than six weeks. In the subsequent discussion **Calmette** stated that he had given inhalations of chloroform, without producing complete narcosis, to two children suffering from whooping-cough. After five or six *séances* the paroxysms were decidedly less, but the treatment had to be abandoned on account of repeated vomiting. Five days later the paroxysms resumed their previous violence, and the disease pursued its usual course.

J. D. ROLLESTON.

The treatment of pharyngeal catarrh in children (*'Thérapeut. Monatshefte,' August, 1908*).—**Hecht** treats the distressing, irritating cough ushering in measles and due to pharyngeal catarrh by the injection of a 5 per cent. solution of zinc soiiodol into the nose, at first every three hours, and later three times a day, the head being well thrown back. He thus dispenses with the usual sedatives, and especially avoids codeia.

J. E. BULLOCK.

Ophthalmology.

Ætiology of interstitial keratitis (*'Ophthalm. Record,' July, 1908*).—**Risley**, in dealing with this subject, states that there are certain cases of this disease which cannot be attributed to congenital syphilis. To them derangement of nutrition must be assigned as a cause. The author reports two cases of severe interstitial keratitis in which there was no history or other sign of syphilis. The general condition of the patient was similar to that of myxœdema in that there was general torpor of mind and body; the lips were thick, the tongue swollen, and the fingers clubbed; the skin was of an ivory-white appearance, and the subcutaneous tissues were thickened. No albuminuria was present. The dried thyroid gland of sheep was given in three-grain doses thrice daily, with the result that a rapid improvement in the corneal condition took place. Finally both cases were cured, but one had a recurrence of the disease in the other eye after an interval of some years. On this occasion the administration of thyroid gland had no effect, and it was not until treatment with mercury was started that improvement occurred.

T. R. WHIPHAM.

Otology, Laryngology, and Rhinology.

Certain peculiarities of mastoiditis in nurslings (*'Arch. Internat. de Laryngol., d'Otol., et de Rhinol.,' xxiii, No. 3*).—**Salamo** says that cases of mastoiditis in nurslings are not unusual, he having collected 134 cases from the children's clinic of Broca. He believes that in some of these cases a simple opening of the antrum would have been sufficient, and that the radical operation (in 21 per cent.) was not so often indicated. The mortality was 13 per cent., which is not astonishing when one considers that tuberculosis was often present, and the general condition before operation was frequently poor.

MACLEOD YEARSLEY.

Partial congenital atrophy of the nasal mucous membrane: a contribution to the ætiology of perforation of the septum (*'Prag. med. Woch.,' 1907, No. 21*).—**Anton**, in the examination of 130 cadavers of children, found three cases of congenital partial atrophy of the nasal

mucous membrane in the anterior part of the septum, and believes that this atrophy can be held responsible in many cases for perforations of the septum.

MACLEOD YEARSLEY.

Occlusion of both auditory canals with partial bony obliteration of the tympanic cavity (*Arch. f. Ohrenheilk.*, lxx, pp. 213-218).—**Török** reported this case in a girl, aged 14 years. The conditions found on examination and operation were: Bilateral occlusion of the external auditory meatus at the inner extremity of the membranous part. The bony external meatus and auricles were normal, as also were the mastoid processes and Eustachian tubes. The tympanic cavities were constricted by bony masses, which, in the direction of the oval windows and promontories, were adherent to the labyrinth walls. On cutting the membranes the hearing was very much improved.

MACLEOD YEARSLEY.

Congenital closure of the nares (*Med. Press*, November 4, 1908).—**Chiari** has reported on several cases of closure of the posterior nares by a membrane extending from the gums to the roof of the pharynx. He has observed the remains of the same membrane in females fifty years of age. It stretches from the gums to the roof of the pharynx as a smooth, greyish membrane, with a hole in the centre corresponding with the opening of the nares. The patient complains of difficulty in breathing, but nothing in the lungs is found to account for this subjective feeling, and it is not until the membrane is discovered that it can be explained. The hearing also is impaired. The membrane can be removed with a pair of forceps, and this improves both the hearing and respiration. The author discovered the first of these cases in 1885, and since then he has met with ten others.

T. R. WHIPHAM.

On the blood and lymph vessels of the tonsils, especially in relation to the question of post-operative hæmorrhage (*Russische Monatschr. f. Ohrenhkl.*, etc., July, 1907).—**Orleanski**.—This work gives very fully the lymphatic and blood supply of the tonsils.

GEORGE N. BIGGS.

A case of peripheral unilateral hypoglossal paralysis, with hemiatrophy of the tongue (*Wien. med. Wochenschr.*, No 31, 1907).—**Baumgarten**.—At the age of $1\frac{1}{2}$ years this child was operated on for "glands of the neck." Some little while afterwards it was noticed that the child's speech was becoming indistinct, and that the tongue was directed to one side. The operator thinking that the nerve had been injured at the time of operation, and as there was no involvement of the other cerebral nerves or any brain symptoms, the diagnosis of peripheral paralysis was made. The site of probable injury is described, and there is a summary of the literature of the subject.

GEORGE N. BIGGS.

Foreign body in left bronchus discharged in a mass of pus on bronchoscopic examination (*Arch. Internat. de Laryngol., d'Otol., et de Rhinol.*, May-June, 1908).—**C. Compairé** reports a case of a child, aged 7 years, in whose left bronchus there was a pine scale which had been in position for twelve months and had given rise to an extensive bronchopulmonary abscess. No foreign body was revealed on radioscopic examination, but the extent of the abscess was defined. Under chloroform the bronchus was examined and the abscess drained, and in the last discharge to come away the scale was found. The child made a rapid recovery.

GEORGE N. BIGGS.

Surgery.

The treatment of hip disease (*Canadian Journ. of Med. and Surg.*, November, 1908).—**McKenzie** describes the treatment he adopts in cases of tubercular disease of the hip, in which direct exposure to the sun's rays is an important factor. The mortality in these cases during the author's first ten years' work was about 10 per cent., but during the second decade it was much less. The improvement in this respect could only be attributed after a careful review of the methods employed to the greater use of direct sunlight. The patient is kept in a very simple cot, known as the Bradford frame, which consists of an oblong rectangular frame, eleven to fifteen inches in width, and about a foot longer than the patient's height. This is covered with a sheet of canvas, which is laced down. At either end is a bracket for applying extension and counter-extension, and a cage is placed over the feet to prevent any tendency to equinus or excessive rotation of the limb. The frame is easily carried from one place to another without disturbing the patient. Every day both in summer and winter the patient is carried out of doors so as to be fully exposed to the sun's rays, and when the weather is suitable the affected part is fully exposed without any covering, and this is done during the greater part of the year without discomfort. At the commencement the length of time during which the patient is exposed should be regulated so as to avoid undue sunburn. The patient should at times lie upon his face and at others upon his back, so that all parts may be reached by the direct rays of the sun. He is kept lying on the frame for several months, not even being allowed to assume a sitting posture. The author is doubtful whether tuberculin has any beneficial effect, but the injection of iodoform suspended in glycerine has proved a valuable aid. Since 1898 the writer has had eight deaths among 166 cases which have been traced; of these two died from asthenia due to hip disease, three from tuberculosis of the lungs, and one from tubercular meningitis. In two cases amputation at the hip-joint was performed, both with good results.

T. R. WHIPHAM.

Two further cases in children of cicatricial, so-called impermeable stricture of the œsophagus; œsophagoscopy; cure (*Bull. de la Soc. de Péd. de Paris*, May, 1908).—**Guisez'** case (No. 1) was a child, aged $4\frac{1}{2}$ years, who had swallowed a mouthful of caustic potash. After some initial symptoms of dysphagia and dyspnoea the child apparently got quite well. Two months later it was noticed that solids could not be swallowed without great difficulty; as this difficulty increased the child was taken to hospital. After failure to pass a catheter œsophagoscopy was performed. Two strictures were found, which were dilated till No. 28 could be passed with the use of circular electrolysis. The negative electrode seems to help dissolve scars which formerly resisted ordinary dilatation, and by its use it is only necessary to repeat the dilatation every two or three months. In this case the result was excellent. The second child was aged $10\frac{1}{2}$ years, and the stricture was caused by the same poison. Here no serious consequences were seen till four months after the accident, when the child could only swallow liquids. Œsophagoscopy was performed under chloroform and dilatation effected up to the passage of No. 30. The author has used this method during the last three years; out of twenty-three cases only four have been found where the operation could not be performed; these were very old and fibrous structures.

M. D. EDER.

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THE MEDICAL INSPECTION OF ELEMENTARY SCHOOL
CHILDREN.

THE ROYAL SOCIETY OF MEDICINE.
SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

Friday, February the 26th, 1909.

DR. GEORGE CARPENTER (Vice-President of the Royal Society of Medicine and Chairman of Council of the Section for the Study of Disease in Children) opened the discussion with the following paper :

THE subject of the medical inspection of elementary school children has been before the Council of the Society for the Study of Disease in Children and the Section for the Study of Disease in Children of the Royal Society of Medicine on several occasions. The Council consider that the time has arrived when a discussion on this important subject by the only scientific body which devotes its energies exclusively to the study of children's diseases in the United Kingdom will be of medical and public service, and they have requested me, having had some experience of medical inspection of elementary school children, to open it.

In accordance with their request, I have pleasure in bringing the following points before your notice.

The Board of Education in its circular numbered 582, dated January the 23rd, 1908, addressed to local education authorities on the subject of medical inspection of school children, while admitting that it has been pressed by many local education authorities to issue a complete set of forms for use, nevertheless thinks it "expedient to leave considerable latitude in regard to the particular forms or schedules, subject to certain considerations."

Accompanying this circular is a schedule of medical inspection wherein the Board of Education indicate the particulars, attention to which they regard as constituting "the *minimum* of efficient medical inspection," and "they consider that at least these particulars should be included in any other schedule which the local education authority may authorise for use in their schools."

Further, the Board of Education states that "it deliberately excludes many points of anthropometrical or statistical interest which are worthy of attention, and which it is hoped may receive attention in suitable districts."

Clearly then, local education authorities were invited to prepare their own schedules for use in their schools, the only stipulation being, to use the Board of Education's own terms, "at least these particulars should be included" which it set out as the *minimum*.

The Board of Education was obviously not averse to receiving additional useful medical information, because it states in its circular that "it hopes points of anthropometrical or statistical interest may receive attention in suitable districts," as well as from the fact that it lays *special* stress upon the schedule which it sets forth as constituting the *minimum* of efficient medical inspection.

While the Board of Education is not at the present time, so it states, prepared to issue forms, nevertheless any forms which experience of the working of the Act may show to be necessary or desirable will be issued in due course. The intention seems clear. Others are to pick the chestnuts out of the fire and the Board of Education will consume them. The odium, should any be attached to this pioneer work, is to fall upon local education authorities—in other words, the local medical inspectors of the schools, because it is obvious who would perform the rôle of Jonah should a storm arise. The Board of Education, in face of difficulties, would trim its sails to the popular hurricane and help the others lighten the ship.

And it is well realised that there would be difficulties, because these are specially mentioned in the circular. Some of the

difficulties are of no medical concern—thus the Board draws attention to “the limited resources of local education authorities,” and “the introduction of a new element into school life or organisation.” But the “feelings or prejudices of parents have to be considered,” so the Board states, and it is precisely those feelings and prejudices which hamper the medical man in his duties, which mark him out for popular sacrifice, and in the escape from which he looks for, and is entitled to expect, official sanctuary.

Turning to the schedule of medical inspection, it is obvious to the experienced physician that as there set forth it is unpractical and impracticable. To make it workable in my own experience a practical clinical chart had to be designed.

It will be seen on inspection of the Board's circular that attached to each of the headings comprised in this medical inventory are reference numbers, and on referring to these under the heading of “Notes for Inspecting Officer” the nature of the medical information that is demanded by the Board of Education as the *minimum* of efficient medical inspection is there set forth.

For example, on referring to the reference number attached to the words “Heart and Circulation” on the Schedule of Medical Inspection (*vide* page 158) this is indicated as meant to “include heart-sounds, position of apex-beat, anæmia, etc., in case of anything abnormal or requiring modification of school conditions or exercise.”

To that attached to “Lungs” the reference number specifies “including physical and clinical signs and symptoms.” To that under “Nose and Throat” the specification is “The presence or absence of obstruction in the naso-pharynx is the chief point to note. Observations should include mouth-breathing, inflammation, enlargement, or suppuration of tonsils, probable or obvious presence of adenoids, polypi, specific or other nasal discharge, catarrh, malformation (palate), etc.”

To that attached to “Tuberculosis” the reference number specifies “glandular, osseous, pulmonary or other forms.”

Indicating the extreme precision that was required under “Rickets” the reference number orders the medical inspector to “state particular form, especially in younger children.” I personally am acquainted with and admit only one variety of rickets, but doubtless the Board of Education will instruct its medical inspectors as to the precise meaning of this instruction when it issues in due course “any forms which experience in the working of the Act may show to be necessary or desirable.”

But I will not weary you by taking you through any more of these items, I have sufficiently indicated the Board of Education's train of medical thought in regard to these matters, and as the schedule is before you you will have observed the various items for yourselves.

There are no less than twenty-four different headings comprised in this official schedule of medical inspection dealing with, among other things, the skin, the teeth, the nose and throat, the eye, the ear, the nervous system, and so on.

The twenty-fourth item on the list comprises "other disease or defect," and on referring to the reference number this is stated to mean "any weakness, defect, or disease not included above (*e. g.* ruptures) specially unfitting the child for ordinary school life or physical drill, or requiring either exemption from special branches of instruction or particular supervision."

It will be seen, therefore, that this *minimum* of medical inspection according to the Board of Education's memorandum, which specifically mentions congenital syphilis, Hutchinsonian teeth, and states that "other skin diseases should be looked for" together with "particulars of diseased conditions actually present or signs of incipient disease," "spinal curvature," "bone disease," "deformed chest," "shortened limbs," and a schedule moreover which is prodigal in "etceteras," implies and necessitates not only a thorough medical examination but a very skilful and experienced medical examiner.

To facilitate medical inspection in a London suburb, whose local education authority had engaged me to examine some hundreds of their school children, I drew up a practical form which comprised all the requirements contained in the Board of Education's circular (No. 582) to local education authorities.

That form is now before you, and on comparing it with the medical requirements as set forth by the Board of Education you will observe that it enables the medical examiner to quickly register the defects which the Board of Education deliberately instructs him to discover and which he may find upon the child.

The form, though at first sight it may appear to be complicated, is in reality very simple, and has been devised for the rapid recording of the results of the medical inspection by a few pen marks in red ink—the addition of a simple word such as "yes" placed opposite the corresponding condition, or an abbreviation such as "n" for normal, or the crossing out by the pen other printed conditions which are not present and leaving intact those that are present are sufficient for the majority of the notes that are required.

I will now pass to the practical working of the Act in so far as it has come under my personal observation.

The medical inspection dealt with those small children who had first joined school and those children who were about to leave school. It took place at the termination of the year 1908, and I was assisted by Dr. Kenneth Kellie, Mrs. Stevens, M.B., B.S.Lond., a ward sister from the Queen's Hospital for Children, a private nurse, and the lady health visitor.

The children were examined under the conditions which usually obtain at the London children's hospitals, and such as I have been accustomed to make during the twenty odd years that I have been attached as a physician to those institutions.

The little ones were undressed, wrapped in a blanket, placed on a couch, and a thorough medical inspection was made in a well appointed room, the best that could be obtained at the particular school for the purpose. In many instances the parents were present and in all cases one of the school-masters or mistresses.

As the Board of Education rightly anticipated the feelings and prejudices of parents had to be reckoned with. I will read one letter of complaint that I have received from a parent, who also made direct complaint to a local paper and the Board of Education :

"28th November, 1908.

"With reference to the medical examination of my little boy at the Church Fields School on the 26th, I regret to inform you that the child has continually complained of his throat since the doctor took the liberty of pushing his finger and some instrument down his throat and my wife has had to take him to her doctor. Had my wife known such treatment was to be undergone she certainly would not have allowed him to go; unfortunately I was away. I think it only right to inform you of this, in case he may develop some other complaint, as the children were examined so quickly that I have certain reasons for wondering whether clean hands and instruments were used for each child. I here wish to inform you that I shall not allow either of my other children to be examined in this ridiculous and unnecessary fashion."

This parent's letter to the local paper was in much the same strain, and in a postscript to that he states: "I omitted to mention a most disgusting thing done, *i. e.* the rug or blanket used to cover the child while being conducted nude from the undressing room to the examiner and back is the same article used for each and every child. Supposing any of the children are suffering from a skin disease, who will be held responsible?"

In his communication to the Board of Education he asks if children must be stripped absolutely nude, instruments and fingers forced down their throats, "if so he strongly objects, as he thinks the treatment disgusting in the extreme."

In reply to a letter from the Clerk of the local education authority in reference to parents' complaints, the Board of Education wrote to the local education authority as follows, dated December the 9th, 1908:

"Sir,—In reply to Mr. ——— letter of the 7th instant, I am directed to state that a consideration of the inspection form used by Dr. Carpenter and of the objections received from parents raises questions of great practical importance which appear to require the immediate attention of the local education authority.

"These questions can be more conveniently discussed at a personal interview than by correspondence, and I am to suggest that an appointment should be made at an early date for representatives of the local education authority to attend at this office and discuss the matter with the Board's chief medical officer."

In response to that the Chairman and Clerk of the local education authority attended at the offices of the Board of Education and had an interview with the Chief Medical Officer. The Clerk notified me of this on the morning of the interview, my attendance there not being specifically asked for. I took it to mean that I was not wanted, but in any case I could not have attended as the notice was too short.

On December the 31st I received a letter from the Clerk of the local education authority as follows:

"Herewith copy correspondence with the Board of Education respecting the medical examination of school children, particularly in reference to a complaint by a Mr. W—, together with a copy of W—'s letter to the Board. I shall be glad to hear for the information of the Committee what you have to say with reference to W—'s several allegations.

"When, with my Chairman, I saw the Medical Officer of the Board, I gave him a copy of your form and suggested that he should strike out what he considered inadvisable or unnecessary, but they do not appear inclined to deal with it in this way.

"I am writing them again."

The gist of that interview, which I subsequently gathered from the Clerk of the local education authority, was that undressing children for the purpose of medical inspection was superfluous and unnecessary, and that the heart could be easily auscultated by lift-

ing up the underclothing and exposing a small cutaneous area over the left nipple.

The medical examination of school children in this district was completed on December the 16th last at the close of the school year.

On January the 13th I had an informal discussion with the Clerk of the local education authority on the subject of school inspection, and I suggested to him that, in deference to "Mrs. Grundy," all reference to the male genital organs and urine could be left out of my form.

On January the 15th I received the following communication from the Clerk of the local education authority :

"The subject of medical examination was before the Elementary Schools Committee on Wednesday last. I duly conveyed to them, as promised, your strong opinion that the form compiled by you merely carried out the directions of the Board's circular No. 582. I also explained to them that in deference to the Board's directions you propose to modify the form in the manner shown on the copy I submitted to them.

"I cannot say that the Committee were satisfied; many of them held very strong views upon the items in the form which have been acted upon but which you now agree to delete. Finally the form was referred to two members of the Committee with instructions to modify it in accordance with the Committee's views. Their report will come up to the Education Committee which sits on Monday next, at 6 p.m."

My form, as you will observe, was referred to two members of the local education committee to *modify it in accordance with the Committee's views!*

One of these committeemen was a local medical practitioner. My bowdlerized form, which I was not invited to see, was sent to the Board of Education and met with the following reception:

"10th February, 1909.

"In reply to Mr. S—'s letter of the 22nd ultimo, I am directed to state that the Board cannot undertake to suggest the omission of particular items from the amended copy of the schedule therein submitted. Even with the omissions suggested by the authority that schedule is still open in a very considerable measure to the criticisms offered by the Board in their letter of the 11th ultimo.*

"In circular 582 a clear indication has been given of the nature and scope of the medical inspection which the Board consider to be suitable in the case of children attending public elementary schools;

* *Vide* letter dated December the 9th, 1908.

and they are still of the opinion that the entire question of the schedule should be reconsidered by the authority, with a view to the adoption either of the Board's schedule or of some one of the several other schedules in common use, with, if necessary, such reasonable modifications as may be indicated by any special local conditions or circumstances."

The *coup de grâce*, however, was administered by the local education authority, who tossed the printer's bill for the form into the Public Health Office with the intimation that the Medical Officer of Health was expected to discharge it.

It is obvious, therefore, that if the medical inspector does his duty and examines properly, *if the parents object* he need expect neither support nor encouragement from his Local Education Authority nor from the Board of Education. If, on the other hand, he does not perform his duties properly his functions are parasitic rather than medical, and he becomes an extra and an unnecessary burden on the rates and the taxpayer.

Turning once more to the circular 582 of the Board of Education, the following extraordinary pronouncements are made in reference to the purely medical aspect of this question. "The child need only," so the Board lays down, "have its clothes loosened or be partially undressed," and "needless examination of healthy children should for obvious reasons be avoided."

But what medical man is there who understands his profession and who knows his business who can pronounce by *looking at a child* whether it is healthy or not? The test of health is afforded by the expert medical examination.

Fancy in these days of advanced medical knowledge being instructed by the Board of Education that a medical inspection of a child can be properly conducted by loosening its clothes or by partially undressing it.

When I was a medical student such methods were then looked upon as very old fashioned and behind the times, and since then very many moons have come and gone.

If these be really the well-considered views of the Board of Education, then the sooner it is properly instructed by men who have had clinical experience and who are authorities on the diseases of children the better will it be for the country. If we are to have medical inspection of elementary school children let it be a medical inspection in the proper sense and acceptance of the term and not a sham.

I have had nearly a quarter of a century's work among children,

and my views in regard to the way a medical inspection or examination—call it what you please—should be conducted are exactly the opposite to that of the Board of Education.

I frankly tell the Board the information it demands in its circular No. 582 cannot be obtained by its antiquated instructions.

And my long experience among sick children is entirely borne out by my examination of 552 presumably healthy children of a London suburb who *were* undressed and *were* properly examined.

Here are a few selections among very many items of interest :

Of the 552 examined there were 249 boys and 210 girls between the ages of three and seven years, a total of 459 small children. The remainder boys and girls varied between the ages of ten and fifteen years. In 69 girls 32 had decided holes, and 31 small holes in the abdominal wall underneath the umbilical cicatrix, and 3 had protuberant navels. In 258 boys 51 had decided holes and 38 small holes in the same situation, and in 7 the navel was protuberant.

Two children had inguinal hernia. Eight external abdominal rings in males admitted the index finger and 71 admitted the little finger, so that many at least of these children were in a fair way to develop inguinal hernia later on. Twenty-five children required circumcision. Weak ankles and flat feet were quite common, and no less than 234 children displayed these features in more or less degree.

Over 200 displayed rickety deformities in varying degrees and no less than 270 had beaded ribs ; in a few rickets were pronounced. In 101 children the abdomen was protuberant and in 7 the abdominal glands were palpable. In 367 children the teeth were carious ; with a total of 1514 carious teeth an average of 4 per girl and $4\frac{1}{2}$ per boy. The tonsils were enlarged in 119 and in 129 there were adenoids, the naso-pharynx in 34 being completely blocked by growth. Twenty-one were deaf from Eustachian catarrh and in 9 children there was otorrhoea with perforated drums. In 181 children the deep cervical glands were enlarged, in 172 the submaxillary, and in 337 the superficial cervical, and in 252 the inguinal glands were palpable.

Twenty-nine children had bronchitis, 1 pneumonia, and 1 cirrhosis of one lung with a transposed heart, a skiagram of which I produce for your inspection. This last child looked particularly well and had rosy cheeks, and under the quaint instructions of the Board of Education would have been excluded from any searching examination. Of skin complaints 2 had xerodermia, 1 psoriasis, and 7 pediculi corporis. These defects were discovered by examining their skins, and not by looking at their waistcoats and pinafores. In 39 there

were no vaccination marks. But I must be careful here, lest the conscientious objectors take exception to my observations.

To me, engaged in examining sick children all my medical career, the medical inspection of a number of so-called healthy children proved an irresistible attraction, and I accepted the offer of the local education authority to make the initial medical examinations with pleasure, but the personal experiences that I have gained have not been such as would lead me to a desire to repeat them.

To many medical inspectors of school children, however, who take an interest and a pride in their work, the class of men the Board of Education should strive to enlist in its service, and who hope to make a living by it, what they can and what they cannot do, and how much support they will receive in their arduous duties from the people who have set them their task, are matters of vital interest.

Faced by discontented and fault-finding parents of the lower classes on the one hand, by unsympathetic and technically uninformed local education authorities, often inspired by local medical jealousies on the other, and left in the lurch by a timid Board of Education, their lot is not likely to be an enviable one.

They are faced by expulsion and ignominious treatment if they do their duty and properly examine the children, as they are bound to do if they carefully follow the Board of Education's "Notes for Inspecting Officer," and if they do not do their duty their work will be of trifling value to the elementary school children and the State. It requires no prophet to foresee what will happen if medical inspectors are faced by parental objections, and are deprived of official support: they will pass along the lines of least resistance, the *res angusta domi* will prevail, and the national physique will continue to suffer. The Board of Education, if it intends to stand by its "Notes for Inspecting Officer," must be straightforward and not shelter itself behind inspecting officers, and allow the men in its service to be led out to execution because they have performed their duties conscientiously and well. If, on the other hand, the Board of Education's "Notes for Inspecting Officer," the *minimum* of efficient medical inspection as laid down by the Board, are not intended to be taken seriously, then let it modify or withdraw them, because, as they stand, they compel a conscientious medical inspector to make a thorough examination in every case.

This section of the Royal Society of Medicine, consisting as it does of leading children's specialists in the Kingdom, has hitherto abstained from expressing an opinion on the medical aspects of the medical inspection of elementary school children.

They now have the opportunity to instruct the country and a Board of Education as to the way a medical examination of the child should be conducted in their experience. Further, the Board of Education is in need of expert instruction as to the unwisdom of being satisfied as to the health of a child by a casual inspection of a triangle of exposed flesh over the cardiac area, or by means of a glance at the child through its wearing apparel, however learned that glance may be.

The hands of the Chief Medical Officer of the Board of Education evidently require strengthening, because it must be as apparent to him as it is known to me that medical inspection without medical examination is a most misleading procedure.

Let the Board of Education adopt a manly course and take the responsibility of medical inspection on its own shoulders instead of using medical inspectors as whipping boys.

Let it take its courage in both hands and at once issue a practical form and compel a proper medical examination of the children, such as a sick child would undergo at any recognised London or provincial children's hospital, and let it be well understood by local education authorities and others that it will support the medical inspectors in regard to this.

The Act (Education [Administrative Provisions] Act, 1907) lays down in Section 13: (1) "The powers and duties of a Local Education Authority under Part III of the Education Act, 1902, shall include (b) the duty to provide for the medical inspection of children immediately before, or at the time of, or as soon as possible after their admission to a public elementary school, and on such other occasions as the Board of Education direct, and the power to make such arrangements as may be sanctioned by the Board of Education for attending to the health and physical condition of the children educated in public elementary schools."

It is clear, then, that the Legislature intended medical examination when it ordered medical inspection, for it at the same time authorised attention to the health and physical condition of the children. Before there can be treatment there must be diagnosis, and diagnosis must be preceded by medical examination.

The present instructions to local education authorities by the Board of Education on the way to conduct a medical examination can only be viewed as an ill-advised, though doubtless unintentional, encouragement to medical inspectors of elementary school children to pocket the fees and neglect the work, and so rob the Act of most of its value.

*Circular to Local Education Authorities.**Schedule of Medical Inspection.*

Circular 582.

Letters should be addressed—

“The Secretary,
Board of Education,
Whitehall,
London, S.W.”

and should show the complete postal
address and designation of the writer.

BOARD OF EDUCATION,

WHITEHALL, LONDON, S.W..

23rd January 1908.

EDUCATION (ADMINISTRATIVE PROVISIONS) ACT, 1907, SECTION 13.

SIR,

1. THE accompanying Schedule has been drawn up in response to requests which the Board of Education have received for further and more definite guidance as regards the details of the work of medical inspection than was given in the Memorandum (Circular 576) which was issued by the Board on 22nd November 1907. The Board have, indeed, been pressed by many Local Education Authorities to issue a complete set of Forms for use in carrying out the work directly or incidentally involved in the performance of these new duties. Any Forms which experience of the working of the Act may show to be necessary or desirable will be issued in due course, but for the present the Board think it expedient to leave considerable latitude, subject to the considerations hereinafter set out, in regard to the particular Forms or Schedules to be used in different cases or circumstances.

2. The chief difficulties to be considered are administrative rather than educational or scientific. There is comparatively little dispute as to the end in view, or as to the means which, from the technical standpoint of medical science and practice, should be adopted for its complete attainment.

But the existing resources of Local Education Authorities are (for practical purposes, at all events) not unlimited, the feelings and prejudices of parents have to be considered, and a new element has to be introduced into school life and organisation with the least possible disturbance and inconvenience. Moreover, in this case two departments of local public administration are brought for the first time into organic connection—those of public health and of public education.

3. The Board are fully aware of these difficulties, and in preparing their Memorandum and Regulations it was necessary for them to consider what system would best reconcile the theoretical and practical considerations, and overcome the divergence between the ultimate end and the end immediately attainable, or between the methods which are scientifically desirable and those which can be applied in existing circumstances at the initiation of the work under the Act.

4. In the accompanying Schedule the Board indicate the particulars, attention to which they regard as constituting the *minimum* of efficient medical inspection, and they consider that at least these particulars should be included in any other Schedule which the Local Education Authority may authorise for use in their Schools. It deliberately excludes many points of anthropometric or statistical interest which are worthy of atten-

tion, and which it is hoped may receive attention in suitable districts. Nor does it profess to lay down the lines of a clinical study or of a scientifically complete medical examination. It is intended to indicate the methods which, in the Board's opinion, should be followed and the particulars which should be attended to for the purpose of determining the fitness of the individual child for school life, to guide the Authority in adapting education to the peculiarities or abnormalities of the child, and to prepare the way for measures for the amelioration of defects in the child or its environment.

A more elaborate and complete form could readily be devised, but the Board's knowledge of the circumstances in which the work is to be done leads them to believe that greater elaboration would in the majority of cases defeat its own end.

5. If this Schedule is properly used, few cases of serious physical weakness or defect will escape detection. Where the ordinary inspection shows the need of further and more searching medical examination a supplementary blank form should be used in which particular defects or diseases should be fully recorded. It may facilitate inspection if the Schedule is printed on cards (8" by 5" or 10" by 6"). The Notes are included in the attached form for the convenience of the School Medical Officer, and should not be reprinted on the cards. Of course it is not necessary that negative findings on all the points mentioned in the Notes should be recorded.

It will be noticed that a space is reserved in the Schedule for "General Observations"; this may conveniently be used to record a general summary of the condition of the child, and any information which may be available as to the home environment, or other conditions affecting its health.

It is considered that the inspection of each child should not occupy on the average more than a few minutes, and that the child need only, as a rule, have its clothes loosened or be partially undressed. Time may be saved in the actual inspection by the Medical Officer if the entries in some of the spaces are filled in by the school authorities before his visit. The four columns in the Schedule are designed for the four inspections required during school life.

With regard to items 17 to 24 of the Schedule, while it is necessary that all indications of diseased or unsound conditions should be thoroughly investigated, needless medical examination of healthy children should, for obvious reasons, be avoided.

6. Where children are found to belong to that class of "defectives" for whose education special provision is or ought to be made under the Statutes relating to such children, such cases should be made the subject of a special report to the Local Education Authority.

7. *All entries of the results of inspection in each individual case must be regarded as confidential.*

I have the honour to be,

Sir,

Your obedient Servant,

(Signed) ROBERT L. MORANT.

To

The Local Education Authority.

Reference
Number
of Note.

1. Date of birth to be stated exactly, date of month and year.
2. "Other illnesses" should include any other serious disorder which must be taken into account as affecting, directly or indirectly, the health of the child in after life, *e.g.*, rheumatism, tuberculosis, congenital syphilis, small-pox, enteric fever, meningitis, fits, mumps, &c. The effects of these, if still traceable, should be recorded.
3. State if any cases of, or deaths from, phthisis, &c., in family.
4. Note backwardness.
5. Age to be stated in years and months, thus, 5 $\frac{1}{2}$.
6. Insufficiency, need of repair, and uncleanliness should be recorded (good, average, bad).
7. Without boots, standing erect with feet together, and the weight thrown on heels and not on toes or outside of feet.
8. Without boots, otherwise ordinary indoor clothes.
Height and weight may be recorded in English measures if preferred. In annual report, however, the final averages should be recorded in both English and metric measures.
9. General nutrition as distinct from muscular development or physique as such. State whether good, normal, below normal, or bad. Under-nourishment is the point to determine. Appearance of skin and hair, expression, and redness or pallor of mucous membrane are among the indications.
10. Cleanliness may be stated generally as clean, somewhat dirty, dirty. It must be judged for head and body separately. The skin of the body should be examined for cleanliness, vermin, &c.; and the hair for scurf, nits, vermin, or sores. At the same time ringworm and other skin diseases should be looked for.
11. General condition and cleanliness of temporary and permanent teeth, and amount of decay. Exceptional features, such as Hutchinsonian teeth, should be noted. Oral sepsis.
12. The presence or absence of obstruction in the naso-pharynx is the chief point to note. Observation should include mouth-breathing; inflammation, enlargement, or suppuration of tonsils; probable or obvious presence of adenoids, polypi; specific or other nasal discharge, catarrh, malformation (palate), &c.
13. Including blepharitis, conjunctivitis, diseases of cornea and lens, muscular defects (squints, nystagmus, twitchings), &c.

Reference
Number
of Note.

14. To be tested by Snellen's Test Types at 20 feet distance (= 6 metres). Result to be recorded in the usual way, *e.g.*, Normal V. = $\frac{6}{6}$. Examination of each eye (R. and L.) should as a rule, be undertaken separately. If the V. be worse than $\frac{6}{9}$, or if there be signs of eye strain or headache, fuller examination should be made subsequently. *Omit vision testing of children under 6 years of age.*
15. Including suppuration, obstruction, &c.
16. If hearing be abnormal or such as interferes with class work, subsequent examination of each ear should be undertaken separately. *Apply tests only in general way in case of children under 6 years of age.*
17. Including defects of articulation, lisping, stammering, &c.
18. Including attention, response, signs of overstrain, &c.
The general intelligence may be recorded under the following heads:—(a) Bright, fair, dull, backward; (b) mentally defective; (c) imbecile. *Omit testing mental capacity of children under 6 years of age.*
19. Under the following headings should be inserted particulars of diseased conditions actually present or signs of incipient disease. The extent of this part of the inspection will largely depend upon the findings under previous headings.
20. Include heart sounds, position of apex beat, anemia, &c., in case of anything abnormal or requiring modification of school conditions or exercises.
21. Including physical and clinical signs and symptoms.
22. Including chorea, epilepsy, paralyses and nervous strains and disorders.
23. Glandular, osseous, pulmonary, or other forms.
24. State particular form, especially in younger children.
25. Including defects and deformities of head, trunk, limbs. Spinal curvature, bone disease, deformed chest, shortened limbs, &c.
26. Including any present infectious, parasitical or contagious disease, or any sequelæ existing. At each inspection the occurrence of any such diseases since last inspection should be noted.
27. Any weakness, defect or disease not included above (*e.g.*, ruptures) specially unfitting child for ordinary school life or physical drill, or requiring either exemption from special branches of instruction, or particular supervision.

SCHEDULE OF MEDICAL INSPECTION.

I.—Name _____ Date of Birth ¹ _____
 Address _____ School _____

II.—Personal History :

(a) Previous Illness of Child (before admission).

Measles.	Whooping Cough.	Chickenpox.	Scarlet Fever.	Diphtheria.	Other Illnesses. ²
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(b) Family Medical History (if exceptional).³

	I.	II.	III.	IV.		I.	II.	III.	IV.
1. Date of Inspection					13. Ear disease ¹⁵				
2. Standard and Regularity of Attendance ¹					14. Hearing ¹⁶				
3. Age of Child ⁵					15. Speech ¹⁷				
5. Clothing and footgear ⁶					16. Mental condition ¹⁸				
III.—General Conditions.					V.—Disease or Deformity ¹⁹				
5. Height ⁷					17. Heart and circulation ²⁰				
6. Weight ⁸					18. Lungs ²¹				
7. Nutrition ⁹					19. Nervous system ²²				
8. Cleanliness and condition of skin. ¹⁰					20. Tuberculosis ²³				
Head					21. Rickets ²⁴				
Body					22. Deformities, Spinal Disease, &c. ²⁵				
IV.—Special Conditions.					23. Infectious or contagious disease. ²⁶				
9. Teeth ¹¹					24. Other disease or defect. ²⁷				
10. Nose and Throat ¹²									
Tonsils									
Adenoids									
Submax. and cervical glands									
11. External eye disease ¹³									
12. Vision ¹⁴									
R.									
L.					Medical Officer's initials				

General Observations.

Directions to Parent or Teacher.

MEDICAL INSPECTION OF SCHOOL CHILDREN (

).

No. of Inspectors
I II III IV

Name	Age:	Years	Months.	Date of Birth	19
Address	School				
Personal History: ("Yes" to be placed opposite corresponding disease, if child has suffered)					
Measles	German Measles	Scarlet Fever	Smallpox	Mumps	
Whooping Cough	Diphtheria	Chicken-pox	"Brain Fever"	Successful Vaccination	1st <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 2nd <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Rheumatic Fever	"Rheumatism"	Growing Pains	Chorea (once—twice—thrice)	Sore Throat	(Cross out where are not present)
Fits	Epilepsy	Other Illnesses	Sleep Talking	Sleep Walking	

Family History:

* State if any cases of or deaths from this in the family	* Consumption	Other Tuberculous Complaints	If other members of same household suffering from Tuberculous Complaints
	Rheumatic Fever	Rheumatism	Nervous Disorders
	Deafness	Other Complaints	Alcoholism

Special Observations

Asylum
Epilepsy
Chorea
Sleep Talking
Sleep Walking

Instructions to Parent or Teacher

Be any weakness, defect, or disease specially unfitting child for ordinary school life or physical drill, or requiring either exemption from special branches of instruction or particular supervision.

Date of Inspection	Age	Height (without boots) { English Metric	Weight (ordinary clothes) { English Metric	Standard
Regularity of Attendance		Clothing: good—average—bad	Footgear: good—average—bad	Class

Nutrition: good—normal—below normal—bad

Muscular Development: Upper Extremities. Good—average—bad

Lower Extremities. Good—average—bad

Condition of Skin (Body) Pediculi Eruptions

Condition of Head: Pediculi	Nits	Pustular Dermatitis	Scurf	Ringworm
Hair: Colour		Condition		

Condition of Mucous Membranes

Heart and Circulation:

Heart's Apex Beat

Area of Cardiac Dulness: Superficial

Deep

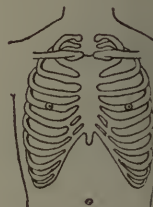
Sounds

Mediastinum

Pulse

Blood

Eustace Smith's Bruit



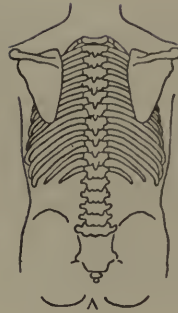
[One fourth of actual size].

Lungs { + = Tubular Breathing
B = Bronchial
Symbol for use on Diagrams of Chest { O O O = Rales of various sizes
? = Rhonchi
//// = Dulness
|||| = Resonance impaired

Shape of Chest { Oval
Lateral Furrows (over lower 3rd of chest junction of ribs with cartilage)
Transverse Furrows (Ricky girdle)
Chest Measurement: Expiration inches

Flattened under Clavicles
Pigeon Breast (Prominent sternum)
Depression over Ensiform Cartilage inches

Round
Eversion of Lower Ribs
Depression over lower part of Sternum inches

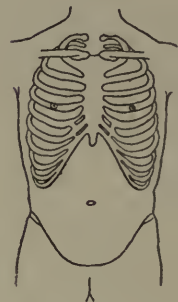


Beaded Ribs
Position of Nipples

Liver

Spleen

Abdomen



Urine: Reaction

Sp. grav.

Albumin

Prepuce: Phymosis

Adhesions

Hernie. Inguinal: { R
L

Umbilical:

External Abdominal Rings { Open { R Just felt—admits tip of little finger—little finger—index finger
L Just felt—admits tip of little finger—little finger—index finger
Closed { R
L

Nervous System:

test- Mental Condition: Attention Response Signs of Overstrain
ental
city { General Intelligence: Bright—Fair—Dull—Backward—Mentally Defective—Imbecile
ira { Speech: Lispering—Stammering Other Defects of Articulation
r na
old.

Habit Spasm:

Paralytic Deformities: (a) Birth

(b) Acquired

[One fourth of actual size].

Bones and Ligaments:

- (a) *Rickets* (including *Rickety Curvature of Spine*) Joints enlarged $\left\{ \begin{array}{l} \text{Elbows} \\ \text{Wrists} \\ \text{Knees} \\ \text{Ankles} \end{array} \right.$ Knock-knees Bow-legs
 Out-bowing of Tibiæ *Out-bowing of Femora* *Anterior bowing of Tibiæ*
- (b) *Syphilis: Cranial Osteophytes*
- (c) *Tubercle* (including *Spinal Disease*)

(d) Deformities

Spine (Lateral Curvature)
 (Direction of curve to be indicated on diagram)

Flat Foot $\left\{ \begin{array}{l} \text{R} \\ \text{L} \end{array} \right.$

Weak Ankles $\left\{ \begin{array}{l} \text{R} \\ \text{L} \end{array} \right.$

Club Foot $\left\{ \begin{array}{l} \text{R} \\ \text{L} \end{array} \right.$

Lymphatic Glands:

(Simple Adenitis—Tuberculous—Hodgkin's—Syphilitic)

Submaxillary

Posterior auricular

Occipital

Superficial cervical

Deep cervical

Axilla

Elbow

Mediastinal (anterior)

Bronchial

Abdominal (wide Abdomen)

Inguinal

Teeth: Clean—Somewhat dirty—Dirty

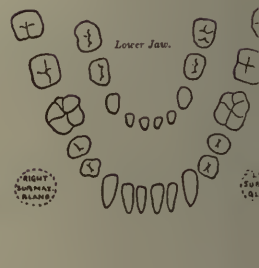
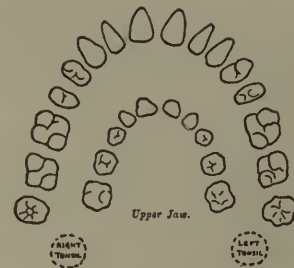
N.B.*—The test teeth are the permanent upper central incisors and the permanent 1st molars

$\left\{ \begin{array}{l} x = \text{Absent} \\ c = \text{Carious} \\ s = \text{Syphilitic}^* \\ p = \text{Enamel Pitted or Furrowed} \end{array} \right.$

Place these symbols on the diagrams of the corresponding teeth

Condition of Mouth:

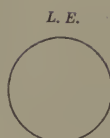
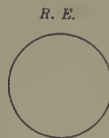
Syphilitic and normal teeth compared.

**Nose and Throat:**

- (a) **Anterior Nares** Mouth Breathing: Yes—No Nostrils Catarrh Discharge Septum
- Hypertrophy of Nasal Mucous Membrane: Front* *Back* *Polypi*
- (b) **Naso-Pharynx; Discharge** **Digital Examination; Normal** *Mucous Membrane thickened* *Follicles palpable* *Stalactitic growth*
- "Yes" to be placed opposite corresponding condition* *Growth from pharyngeal wall* *Growth from vault* *Growth from pharynx and vault* *Naso-pharynx occluded by ad.*
- (c) **Tonsils; Normal** $\left\{ \begin{array}{l} \text{R} \\ \text{L} \end{array} \right.$ *Enlarged* $\left\{ \begin{array}{l} \text{R} \\ \text{L} \end{array} \right.$ *Tonsillitis* $\left\{ \begin{array}{l} \text{R} \\ \text{L} \end{array} \right.$ *State of Follicles* $\left\{ \begin{array}{l} \text{R} \\ \text{L} \end{array} \right.$
- (d) **Pharynx; Follicles** $\left\{ \begin{array}{l} \text{Hypertrophic} \\ \text{Exudative} \end{array} \right.$
- (e) **Palate; Normal—Vaulted—Cleft**

Eye:

- (a) Headache
- (b) Conjunctiva Mucopurulent Ophthalmia Membranous Ophthalmia Pterygetenular Ophthalmia
- (c) Lids Blepharitis Granular Ophthalmia
- (d) Cornea { R
 L
- (e) Iris. Pupil { R
 L Colour { R
 L
- (f) Lens { R
 L
- (g) Muscles { Intra-ocular
 Extra-ocular Nystagmus
- (h) Vision { R
Snellen's Test Types at 20 ft. {
(6 metres) L
Not required for children
under six years old)
if it be worse than 6, or if
there be headache or eye-
strain, examine further
- (i) Fundus Oculi



Ear: (If hearing be abnormal, or interferes with class work, tests to be applied in a general way to children under six years old)

- (a) Discharges R
 L
- (b) Hearing. R Whisper
 L "
- (c) Condition of Drum R
 L
- (d) Auditory Nerve R
 L

For test of hearing use forced
whisper at 10 metres
and deafness under 2 metres
medium " 2 to 4 "
light " over 4 "
The ears of any child who
cannot hear whispers at
10 metres should be ex-
amined



Special Notes:

Medical Officer's Initials,

[One fourth of actual size].

DISCUSSION ON THE MEDICAL INSPECTION OF
ELEMENTARY SCHOOL CHILDREN.

Dr. FREMANTLE (Medical Officer of Health, Hertfordshire) said he approached the matter from a different standpoint from that of Dr. Carpenter. As County Medical Officer his work was to superintend the work of medical inspection of 47,000 school children in thirty-three sanitary districts. The medical inspection should be considered as only part of the general administration of the public health; therefore it seemed far best to give the work of school inspection into the hands of district medical officers of health, most of whom were also in general practice. He was himself the School Medical Officer for the county, with sixteen assistants. The work in the schools was thus done by those who were or had been engaged in clinical work, and were in touch with the conditions under which the children lived. The medical inspection was to be carried out three times during the child's life. Dr. George Carpenter might say that was absurd, because so much might happen between those inspections; but it was an excellent beginning; government in Britain moved slowly, and later the inspections might be more frequent. The records of each child inspected were made on cards, 10 by 6 in., for purposes of filing. The scheme of examination drawn up by Dr. George Carpenter could not be more comprehensive, but the medical man who made such an examination would require corresponding remuneration. A record on this scale would not be worth having unless the examiners were paid at least one guinea per child. And if in his county 47,000 guineas were required to be paid for medical examination of the children, he, as a ratepayer, would strongly object; and if the educational authority were, as demanded by Dr. George Carpenter, to stand firm, the ratepayers would turn them out at the next local election. That showed the fundamental difference between Dr. George Carpenter's and his own points of view. The public were the ultimate masters, and the Board of Education took the view that the matter must only be carried as far as that public wished. The point was to so carry out the inspection as not to rouse parental objections, which the inspector, as the servant of the public, had no right to arouse. For that reason he looked upon the Circular 582 of the Board of Education as a masterly production. It went beyond anything hitherto attempted for our public elementary schools, and it was capable of great extension in the future. The results wanted were those likely to be of most use, and they were of two kinds: those that regard the individual child and those that regard the children in bulk, the school, the district, the county, the race, under varying *régimes* and in successive periods of time. For the former purpose the record was filed and kept in the school; for the latter a copy was filed at the county medical office. Those who took up the clinical point of view might criticise the system of reporting which had been adopted in the Hertfordshire schools, but it was practical and was found to work well. It must be

remembered that the remuneration was based upon an average rate of inspection of six per hour. Hence as little clerical work was required of the medical inspector as possible, while the information was required to be put in such a form that it could be easily summarised for the whole county, and be referred to for the most striking defects. The figure 3 was taken for the normal, regarded as the condition in any one particular which did not arouse the comment of the inspecting officer; 2 meant bad, 1 very bad. On the other side, 4 meant good, and 5 very good. Some inspectors subdivided these and used fractions; thus $2\frac{1}{2}$ was a condition below normal calling for little comment. Fuller details on many points were recorded in a space for general observations. By running through the cards of any one school and keeping the eye on the particular line, for instance, for ear discharge, a general idea, or a precise average, of the state of that school as to ear discharge was quickly obtained. A unity of standard was kept up by circulars and by personal supervision of the inspection by himself. He did not think the Section for the Study of Disease in Children ought to expect any large series of statistics, at least at this early stage. The main object of the inspection was the individual one, and the inspection should be done by men who lived among the children. Dr. George Carpenter contended that there should be examination, not merely inspection; but the Education Department saw no need as yet for a detailed examination. The twenty-four headings represented what the well-trained clinical mind would naturally pass through when looking at a child to see whether it was or was not healthy; the present object was to detect the most serious and widespread defects; not to detect the one-in-a-thousand defect. In future the system might be largely developed.

MR. N. BISHOP HARMAN said that when he looked through Dr. George Carpenter's schedule he was filled with admiration for Dr. George Carpenter's energy, and thankfulness that he was no longer an ordinary school doctor. Even if anyone could be found, either born or educated, with the capability of filling up all that was required in the schedule, he did not know of what use the result would be. Having got such a mass of information it would be necessary to call in a host of statisticians to discover what could be learned from such returns. It seemed to him that these elaborate schedules missed the whole object of the school medical inspection; the school doctor lived to discover defective children, and to get them treated as soon as possible, and he did not live to fill up elaborate schedules, though such things might delight the heart of a bureaucrat. He felt that Dr. George Carpenter's misdirected ingenuity was due to the fact that he had spent so great a part of his life in the wards and out-patient departments of children's hospitals, where all the children were necessarily diseased; so the fact of disease had become an obsession. What is true of a hospital is not true for a school; disease is not the rule. Most of those in that room had subnormal vision, as shown by the number of members who were wearing glasses, yet no one would suggest that they should pass a visual test before being admitted Fellows of the Royal Society of Medicine. Again, it struck

him forcibly that no one had mentioned the school teacher. He was the most important person in the whole school; the intelligent teacher—and they were intelligent nowadays—could tell more about the children under his charge than the medical inspector could possibly learn by his unaided examination. What was chiefly wanted was, not more schedules and returns, but better arrangements for treatment, and especially places to send children to as soon as it was discovered that they had something wrong with them. The object was not to find out what proportion of children had defective umbilical scars, nor what was the size of the inguinal rings, but to get speedy treatment for teeth, ears, eyes, and other serious defects. This was the missing link between school inspection and the treatment of disease in children. He thought that school clinics could alone supply it; and that to the great advantage of the children and the medical profession. He had had six years of school doctoring, and he should count these days amongst his happiest. It was a change to leave a hospital crowded with disease and go to a school, where one was surrounded by hordes of merry children, of whom only a comparatively small proportion were diseased. He believed the cry of physical degeneration was an extremist cry and untrue, yet it was useful in so far as it created a stimulus to correct undoubted defects. Take venereal disease as it affected the eyes of the second generation: Of 22,000 children whom he examined in one year, only five had signs of ophthalmia neonatorum (it must be noted that the blind and partially blind had been removed to special schools). And only five of that same number had marks of interstitial keratitis. In answer to a doctor recently, he said his experience showed that not more than one in about 2000 children presented marks in eyes and teeth of inherited syphilis, and the doctor said he would have put it at even less. But the man who worked only at certain hospitals would repudiate the idea that there were so few.

Dr. G. E. SHUTTLEWORTH said his experience had been almost exclusively with children suffering from mental defects—he had not done much in the way of general school inspection. He had, however, sometimes had occasion to go into a school and pick out children for whom special instruction should be provided; he did that in all the elementary schools in Willesden, where he had more opportunity of seeing the other children in the schools than in his three years' experience under the London School Board, where children were brought from other schools as selected by their teachers, and it was necessary to decide between mental defect on the one hand and disability of some other kind. Very often the child was sent because it had been troublesome in the school, and then it had to be sent back again. It was not easy to make up one's mind as to a child being healthy and normal without going into some detailed examination. It was most important, for example, to decide whether the heart was sound, especially in view of fitness for school drill and for some exercises in particular. It had been said that the teachers could give information with regard to hearing and sight. But that was not always so; he had found children amongst the dullards at the back of the class who had been relegated

there because they were considered below the standard, but who were found to be quite alert though deaf, and who should have been placed in front where they could hear the teacher's voice more easily. The same was true of defects of vision, and on those points there should be a systematic examination of every child in a school. One speaker well said the whole question was the finding out of what children good could be done to by medical attention. But in what way could good be done for children whose parents would not listen to the warnings of the medical inspector? And it was evident from correspondence in medical journals that there was some difficulty in conveying that warning without giving offence to the general medical practitioner. He hoped that difficulty would be adjusted in time. For a medical man to conduct the inspection (as set forth by the Board of Education) properly in ten minutes was a good deal to expect, and he would like to know how long it would take with Dr. George Carpenter's schedule. He feared the whole matter had to be referred down to the question of cost, and the Board of Education was not the body chiefly responsible for that; it was much more the concern of the local authority. It had not yet been settled what share the Government would contribute to the cost, and if the expense proved to be very heavy to the local authority little sympathy from them could be expected. But both under the London School Board and the Willesden authority he had been allowed a good deal of latitude in his own special work, the only difficulty being how to accomplish what one wanted to do in the time. It had been sometimes arranged for him to examine about twenty cases in two and a half hours, and it seemed important that the examiner should not have more cases than he could properly examine in a given time, if reliable observations were to be secured.

Dr. DAN MCKENZIE said there were two strongly opposed policies before the meeting—one voiced by Dr. George Carpenter and the other by Dr. Fremantle. Yet it was not difficult to feel some sympathy with both, and in this country of compromise our task was to strike the happy mean. Dr. Fremantle seemed to have shown that the inspection need not be so thorough as Dr. George Carpenter advocated. It would be a long time before parents as a whole saw the need of the measures which the medical man might think to be necessary. Under the circumstances, he thought the Board of Education's document was as much as could be reasonably expected at present. Certain defects in children were discovered by even the most superficial examination. But was the examination the end of the matter? There was the question of treatment to be discussed. It could be suggested to the parent that the child should be treated, or school clinics could be formed, or the children could be treated by the general practitioner in charge of the child, or finally at special institutions like hospitals. Many of the parents would pay no attention to the warning. There was much in favour of the formation of school clinics in certain parts of the country, but in London the existing hospitals should be utilised for the purpose. He agreed that examination for adenoids by the only sure way—namely, by the finger in the naso-pharynx—was sure to cause

opposition, but in time the teachers would be able to point out the children suspected of having them, and those only need be examined by the medical inspector.

Mr. ROSE said that 85 per cent. to 90 per cent. of children had dental caries. Armed with a dental mirror and probe the work of inspecting the child's mouth was not difficult. He thought the degree of sepsis rather than the degree of dirt should be the phrasing on the form. The chief points as to treatment should be whether the teeth required stopping or extraction. The question of whether the teeth were syphilitic was not of much practical importance. The important point to bear in mind was whether the object of the inspection was for the purpose of collecting statistics or simply a preliminary to treatment.

The CHAIRMAN (Mr. SYDNEY STEPHENSON) proposed: "That this meeting requests the Council of the Section for the Study of Disease in Children to form a committee to consider, and later to report on, the facts which have been brought before it by Dr. George Carpenter and other speakers in the discussion on the medical inspection of school children." This was unanimously agreed to.

ABSTRACTS FROM THE MEMORANDUM ON MEDICAL INSPECTION OF CHILDREN IN PUBLIC ELEMENTARY SCHOOLS.

BOARD OF EDUCATION, CIRCULAR 576, NOVEMBER 22ND, 1907.

SCOPE AND PURPOSE OF THE ACT.

1. The Education (Administrative Provisions) Act, 1907, in so far as it concerns the medical inspection of school children, is the outcome of a steady movement of public opinion throughout the entire community. For some years past evidence has been accumulating that there exists in certain classes of the English people a somewhat high degree of physical unfitness which calls for amelioration, and, as far as possible, for prevention. The Legislature resolved that to grapple effectively with this problem, or at least part of it, it was necessary first to improve the health conditions, both personal and in regard to environment, of the children of the nation. A consideration of the gravity of the need led to the conclusion that medical inspection of school children is not only reasonable, but necessary, as a first practical step towards remedy. Without such inspection we not only lack data, but we fail to begin at the beginning in any measure of reform. The reasonableness of such inspection, if it is conducted on sensible lines leading to an improvement of the surroundings and physical life of the children, must become evident both to their parents and to the nation as a whole.

The Board desire therefore at the outset to emphasise that this new legislation aims not merely at a physical or anthropometric survey or at a record of defects disclosed by medical inspection, but at the physical improvement, and, as a natural corollary, the mental and moral improvement, of coming generations. The broad requirements of a healthy life are comparatively

few and elementary, but they are essential, and should not be regarded as applicable only to the case of the rich. In point of fact, if rightly administered, the new enactment is economical in the best sense of the word. Its justification is not to be measured in terms of money, but in the decrease of sickness and incapacity among children and in the ultimate decrease of inefficiency and poverty in after life arising from physical disabilities.

2. The section of the Education (Administrative Provisions) Act, 1907, which concerns medical inspection of school children (section 13) is as follows :—

“13.—(1) The powers and duties of a local educational authority under Part III of the Education Act, 1902, shall include—

[*(a)* Power to provide for children attending public elementary schools, vacation schools, vacation classes, play centres, etc.]

(b) The duty to provide for the medical inspection of children immediately before or at the time of or as soon as possible after their admission to a public elementary school, and on such other occasions as the Board of Education direct, and the power to make such arrangements as may be sanctioned by the Board of Education for attending to the health and physical condition of the children educated in public elementary schools:

Provided that in any exercise of powers under this section the local education authority may encourage and assist the establishment or continuance of voluntary agencies and associate with itself representatives of voluntary associations for the purpose.

(2) This section shall come into operation on the first day of January nineteen hundred and eight.”

From this it will be seen that two main provisions are incorporated in the section, namely, first, the duty, laid upon all Local Education Authorities, of the medical inspection of children at a stated time and on such other occasions as the Board of Education may direct; and secondly, the power given to all Local Education Authorities of making arrangements, to be sanctioned by the Board, for attending to the health and physical condition of the children in elementary schools.

3. Almost all Local Educational Authorities have taken steps of some kind in the promotion of school hygiene, and many have conducted some form of medical inspection. Hitherto, however, such inspection has been concerned only or chiefly with children selected from the school or class as being in some way obviously defective or diseased. The general routine, where such inspection has been practised, has been for a medical man to visit schools at intervals, make a sanitary survey of the buildings, and examine more or less thoroughly children presented to, or selected by, him. Such cases have, however, as a rule, been imperfectly followed up and much of the advice given has been ignored or inappropriately applied. Much also has been left undone in the way of adapting the methods of teaching to the special physical needs of the children. Moreover, in many districts not only have serious defects of sanitation, such as bad lighting and lack of ventilation, injuriously affecting the children, been ignored, but even the means of preventing the extension of infectious diseases have been neglected in greater or less degree. The present Act is not intended to supersede the powers which have long been exercised by Sanitary Authorities under various Public Health Acts, but is meant to serve rather as an amplification and a natural development of previous legislation.

It is founded on a recognition of the close connection which exists between the physical and mental condition of the children and the whole process of education. It recognises the importance of a satisfactory environment, physical and educational, and, by bringing into greater prominence the effect of environment upon the personality of the individual child, seeks to secure ultimately for every child, normal or defective, conditions of life compatible with that full and effective development of its organic functions, its special senses and its mental powers which constitute a true education.

ORGANISATION.

4. The respective functions of the Board of Education and the Local Education Authorities are clearly defined by the Act. The duties thrown upon the Board consist in advising Local Education Authorities as to the manner in which they should carry out the provisions of the Act, and in supervising the work they are called upon to undertake; in giving such directions as may be necessary regarding the frequency and method of inspection in particular areas; and in considering and sanctioning such arrangements for attending to the health and physical condition of the children as may be submitted to them by individual Authorities. The Board will also collate the records and reports made by the Authorities and will present an annual report to Parliament.

The duty of carrying out the actual inspection has necessarily been entrusted by Parliament to the Local Education Authorities and not to the Board. Each Authority must therefore in due course appoint such Medical Officers or additional medical assistance as may be required for the purpose. Some time must inevitably elapse before all Authorities have their arrangements in working order, but it should be carefully borne in mind that, although the work is begun gradually, the initial organisation established by each Authority should admit of such expansion as will secure the thorough and efficient administration of the Act. In subsequent paragraphs some general guidance is given as to the minimum amount of inspection required.

5. In view of the varied influences which affect, directly or indirectly, the health of the children of the nation, it is manifestly of the highest importance that the administration of this Act should rest upon a broad basis of public health, and should not only secure for Local Education Authorities as much freedom as is consistent with adequate uniformity in the presentation of results for comparative purposes, but should also use to the utmost extent the existing machinery of Medical and Sanitary Administration, developing and supplementing it as required, rather than supplanting it by bringing into existence new agencies, partially redundant and possibly competing.

The Board view the entire subject of school hygiene not as a speciality or as a group of specialities existing by and of themselves but as an integral factor in the health of the nation. The application of this principle requires that the work of medical inspection should be carried out in intimate conjunction with the Public Health Authorities and under the direct supervision of the Medical Officer of Health.

6. It is unnecessary to emphasise the objections to a dual jurisdiction in such matters as the sanitary control of school premises and the notification and prevention of the spread of infectious diseases in which the duties of the Medical Officer of Health and the School Medical Officer necessarily and obviously overlap. If they are to be effectively carried out the interests

and activities of the School Medical Officer must extend over the whole external environment of the child. School hygiene cannot be divorced from home hygiene, and this in turn is intimately bound up with the hygienic conditions of the community. Efficiency and economy require, therefore, an organic relationship between the daily work of the school authority and of the authority responsible for the administration of the wider branches of public health, including the supervision of water and milk supplies, food, housing and sanitation, inquiries into matters affecting infant mortality (including ante-natal influences), home visiting by men and women inspectors, sanitary and bacteriological investigations, the provision of hospital accommodation, disinfection, the cleansing of verminous persons, the notification of the prevalence or otherwise of diseases, such as phthisis, affecting the adult population, and the consideration of social factors, such as the occupation of the parents, or the health, habits, and physical conditions of the family, all of which have a bearing, direct or indirect, upon the children's health.

SUBSIDIARY AGENCIES.

8. The Board are convinced that the work of medical inspection cannot be properly accomplished by medical men without assistance. The teacher, the school nurse (where such exists), and the parents or guardians of the child must heartily co-operate with the school medical officer. In whatever way the system be organised, its success will depend, immediately and ultimately, upon the cordial sympathy and assistance of the teachers. Some Authorities will find that the teachers are able to undertake, without undue strain, a share of the work of furnishing data respecting each child, and even perhaps to carry out some portion of the inspection; and it is clear that the successful application of the principles of hygiene to school life will depend almost entirely upon their efforts. What the mother is in the home the teacher is in the school. Experience shows that when the teachers understand the necessities and opportunities of the situation they are both willing and able to take their share. Their co-operation in the work already done in this direction has been beyond praise. The school nurse and health visitor are also important agents in school hygiene. They may serve as links between the school and the home, and can assist in recording the results of inspection, in securing and maintaining personal cleanliness, and in carrying out medical advice concerning simple complaints. They are also able to give counsel in the home, to visit the children at home or in the school, and in many other ways to advance the cause of school hygiene. The Board are satisfied that this work offers a great field of valuable service for the school nurse, and they recommend that, wherever practicable, Education Authorities should secure, especially in rural districts, the benefit and true economy which may be thus obtained. It is essential, however, that the teacher, school nurse, or health visitor assisting in the administration of this Act should act strictly under the instruction and supervision of medical authority. Nor must the influence which the parent can exercise by example and precept be neglected. One of the objects of the new legislation is to stimulate a sense of duty in matters affecting health in the homes of the people, to enlist the best services and interest of the parents, and to educate their sense of responsibility for the personal hygiene of their children. The increased work undertaken by the State for the individual will mean that the parents have not to do less for themselves and their children, but more.

It is in the home, in fact, that both the seed and the fruit of public health are to be found. All-round co-operation between school medical officer, teacher, nurse, health visitor, and parent will prove both effective and economical, and the full utility of the Act will not be secured unless, in advising Local Education Authorities, the medical officer pays careful attention to considerations of expenditure and to the relative urgency of the reforms he proposes to undertake.

CHARACTER AND DEGREE OF MEDICAL INSPECTION.

9. From what has been said it will be clear that the fundamental principle of section 13 of the new Act is the medical examination and supervision not only of children known, or suspected, to be weakly or ailing, but of all children in the elementary schools, with a view to adapting and modifying the system of education to the needs and capacities of the child, securing the early detection of unsuspected defects, checking incipient maladies at their onset, and furnishing the facts which will guide Education Authorities in relation to physical and mental development during school life. It is evident that—although this work involves (*a*) medical inspection of school children at regular intervals, (*b*) the oversight of the sanitation of the school buildings, and (*c*) the prevention, as far as may be, of the spread of infectious and contagious diseases, including skin diseases—action in these three directions will be incomplete unless (*d*) the personal and home life of the child are also brought under systematic supervision. The home is the point at which health must be controlled ultimately.

The character and degree of medical inspection will depend on the standpoint from which the subject is viewed, the difficulty being of course to attain a due sense of proportion and uniformity, particularly as to fundamental points. Valuable to science though the findings of a more thorough and elaborate medical examination might be, it is the broad, simple necessities of a healthy life which must be kept in view. It cannot be doubted that a large proportion of the common diseases and physical unfitness in this country can be substantially diminished by effective public health administration, combined with the teaching of hygiene and a realisation by teachers, parents, and children of its vital importance. The spread of communicable diseases must be checked; children's heads and bodies must be kept clean; the commoner and more obvious physical defects, at least, must be relieved, remedied, or prevented; schoolrooms must be maintained in cleanly condition, and they must be properly lighted, well ventilated, and not overcrowded; the training of the mental faculties must not be divorced from physical culture and personal hygiene. It is these primary requirements which must first receive attention.

10. The directions given in this circular as to the degree and frequency of inspection refer only to the minimum medical inspection, the effectiveness of which will in future be one of the elements to be considered in determining the efficiency of each school as a grant-aided school. They are not intended to exclude other medical work, which the Board trust will be undertaken by Local Education Authorities according to their abilities and opportunities. For example, the re-testing of the eyesight of every child periodically would be most valuable; an annual measurement of height and weight; the more frequent examination of particular children, especially of those suspected to be suffering from deficient nutrition or found to be defective at former inspections; careful anthropometric surveys or special inspections at various

ages of school life; and similar investigations of a special nature undertaken in particular districts, come within the category of additional medical work wholly desirable where practicable, and calculated to advance school hygiene. Such work, however useful, should be looked upon as subsidiary to the main purpose of the Act.

11. A consideration of these matters has led the Board to the conclusion that as far as practicable the statutory medical inspection should, at entrance or at subsequent inspection, take account of the following matters:

- (1) Previous disease, including infectious diseases.
- (2) General condition and circumstances—
 - (a) Height and weight.
 - (b) Nutrition [good, medium, bad].
 - (c) Cleanliness [including vermin of head and body].
 - (d) Clothing [sufficiency, cleanliness, and footgear].
- (3) Throat, nose and articulation [mouth-breathing, snoring, stammering, tonsillar and glandular conditions, adenoids].
- (4) External eye disease and vision testing.
- (5) Ear disease and deafness.
- (6) Teeth and oral sepsis.
- (7) Mental capacity [normal, backward, defective].
- (8) Present disease or defect: [(a) Deformities or paralyses; (b) Rickets; (c) Tuberculosis (glandular, pulmonary, osseous, or other forms); (d) Diseases of skin and lymph glands; (e) Disease of heart or lungs; (f) Anæmia; (g) Epilepsy; (h) Chorea; (i) Ruptures; (j) Spinal disease; (k) Any weakness or defect unfitting the child for ordinary school life or physical drill, or requiring either exemption from special branches of instruction or particular supervision].

It is unnecessary to discuss here the advisability or otherwise of including in a minimum inspection the various points appearing in this summary, or to add that commonly the findings as to organic defects will be of a negative character, the positive facts of the inspection being relatively few, and in part obtainable by the trained teacher or school nurse. (*See par. 15.*) Moreover, some of the above conditions will not require investigation in children on admission, when this takes place at or under five years of age. On the other hand, some defective children will require a more thorough examination than this minimum. Reasonable latitude must be allowed, and the summary must be taken only to indicate the points upon which the Board desire as much uniformity as possible in the minimum medical inspection, and must be adapted to the age-period. The Board propose to issue at an early date an examination form suitable to this inspection.

REGULATIONS.

12. The Board have decided under section 13 of the Act that *not less than* three inspections during the school life of the child will be necessary to secure the results desired.* The first inspection should take place at the time of, or as soon as possible after, admission to school; the second at or about the third year (say, the seventh year of age); and the third at or

* There will be special areas where the Board may from time to time require that the inspection should be at shorter intervals and of a more searching character, and also areas in which, owing to largeness of size of population, some exception may have to be made in the early years by way of reduction of the burden per annum.

about the sixth year of school life (say, the tenth year of age). A further inspection immediately before the departure of the child into working life would be desirable where practicable, and in some areas it may be best for this to take the place of the third inspection. Certain adjustments will be necessary in working out any standard in practice, as it will at once be evident that without such adjustment the first year (1908) would be unduly burdened with the inspection of the children newly admitted and of all the children already in school.

Provision should be made by each Authority, when the Act has been sufficiently long in operation to be in normal working, for the inspection in each year of (a) the children newly admitted; (b) the children in the school who in that year had matured for their second inspection; (c) those who had matured for their third inspection; and were practicable (d) those about to leave school might also be inspected. But in the first year (1908) it may prove impracticable to attempt more than the inspection of the children newly admitted and those leaving school; and in the second year (1909) the Board will be satisfied with the inspection of those newly admitted and those leaving, with the addition of children who have matured for their second inspection (which is perhaps the occasion of all others requiring the most thorough examination). Some such adjustment would tend to equalise the burden over successive years. It will be understood that the precise way in which the children are grouped in the school for medical inspection will vary according to the internal organisation and circumstances of each school. It may be most convenient, for instance, to carry out the inspection on an age basis rather than on a basis of period of school life. In subsequent years the Board may issue notice modifying the age periods for inspection in order to obtain facts respecting child physique at ages other than those included above.

The Board recommend that each Local Education Authority should encourage one or both of the parents of the child to be present at the first inspection, and to this end a notification should be sent to the parents as to the time and place at which it will take place. Whilst some trouble may be involved in inviting the parents, the Board believe that substantial gains would thus be secured, for by this means misunderstandings will be avoided and prejudice will be disarmed. Moreover, the parent is able to facilitate examination and provide information, and the medical inspector's opinion could be given clearly and directly to the persons most nearly concerned.

REPORT OF THE BOARD OF EDUCATION FOR THE YEAR 1907—1908.

MEDICAL INSPECTION.

IN November, 1907, the Board issued a Memorandum (Circular 576) explaining the principles by which the administration of section 13 of the Education (Administrative Provisions) Act, 1907, relating to the medical inspection of school children, should, in their opinion, be regulated. This section of the Act came into force on the 1st January, 1908, and the experience of the Board since that date has confirmed their belief in the soundness of the principles which they had previously adopted. The Board are aware that the application of those principles must vary accord-

ing to the special circumstances and needs of different localities, and they fully appreciate the fact that the administration of the Act involves many practical problems which can only be solved by experience, and which in the first instance must be dealt with tentatively and provisionally. They are, however, convinced that the general lines laid down in their first Memorandum are those which must be followed if the organisation of Medical Inspection is to be placed on a broad and sound basis.

The Board's first Memorandum on this subject was followed in February, 1908, by a Model Schedule indicating the ground which should be covered by the Medical Inspection of school children and an explanatory Memorandum (Circular 582).

The schedule was purposely made comprehensive, and its apparently detailed character is not inconsistent with the statement in the Memorandum that the inspection of a child should not *on the average* take more than a few minutes. The experience of those Local Education Authorities who have made substantial progress with the work has confirmed the Board's opinion in this respect.

A further Memorandum (Circular 596) was issued by the Board on August 17th, 1908. It was explanatory of the articles concerning medical inspection inserted in the Code of 1908, and gave guidance to Local Education Authorities on several matters of administration. The functions of the School Medical Officer under the Code and the relation of the School Medical Service to the Public Health Service were discussed; the requirements made with regard to the provision for medical inspection in respect of the year ending 31st July, 1909, were explained; and some indication was given as to the scope of the annual report of the School Medical Officer and the various methods in which medical inspection might be followed by arrangements for attending to the health and physical condition of children educated in public elementary schools.

Miss Janet Campbell, M.D., formerly one of the School Medical Inspectors under the London County Council, has been appointed to assist in the Medical Department of the Board.

In view of the short period during which the Act has been in force the Board do not consider it desirable that they should attempt in the present Report to give an account of its working. They are satisfied that substantial progress in the organisation of the work is being made throughout the country, and that, with few exceptions, Local Education Authorities are doing their best to perform the duties which Parliament has imposed on them.

They hope to issue a Special Report shortly, which will give detailed information as to the steps taken by the various Local Authorities in this important matter since the passing of the Act.

THE ORIGIN OF THE FEEBLE-MINDED.*

By W. A. POTTS, B.A.Cantab., M.D.Edin., M.R.C.S.Eng.,

*Late Medical Investigator to the Royal Commission on the
Care and Control of the Feeble-minded.*

(Concluded from page 121.)

As regards alcohol we have divergent views ; much that is extravagant has been written on both sides. I have already shown that if it injuriously affects the individual, it may also tell on the sperm or germ cells. Indeed, Dr. Claye-Shaw has pointed out that alcoholic amenorrhœa and dysmenorrhœa are evidences of the effect on the genital system of the mother. Such an agent as alcohol sometimes acts indirectly, for Dr. Mott has shown that even if injurious *per se* it may weaken the defence against other noxious agencies, such as the absorption of toxins from the alimentary tract. Some of Professor Dixon's recent work has clearly established the fact that alcohol facilitates the absorption of toxins of all kinds. Really it is partly a question of degree and partly a question of the other bad influences. If a healthy man drinks to excess for a time his offspring may apparently go unscathed ; but if the victim of tubercular or cardiac disease indulges to the same extent, there is less chance for the children, who also nearly always suffer when the indulgence is continued over a long period of time. I have heard it suggested that an alcoholic begetting often explains amentia ; I have never seen any evidence to prove this, and it seems improbable that drunkenness on one occasion should have such an effect. There is no doubt, however, that bouts of drinking in the case of married couples, who have permitted themselves immoderate alcoholic indulgence in the first few days of the honeymoon, but have otherwise led lives of temperance, have conduced to feeble and imbecile first-born children. The late Dr. Lloyd Andriezen † collected definite evidence on this point.

I could detail to you experiments as to the effects of alcohol on the developing embryo, and also records of the results to the offspring of administering alcohol to animals before or after conception. Such investigations are, however, only suggestive ; we are not dogs or hens ; other ingredients in our diet besides alcohol would not suit

* Read at the Birmingham Branch of the British Medical Association, on March the 11th, 1909.

† W. Lloyd Andriezen, "The Problem of Heredity," 'Journal of Mental Science,' vol. li, 1905.

a horse, and none of us would thrive on the daily menu of a rabbit. The most convincing evidence is obtained by comparative investigations; individual cases prove nothing—it is all a question of per cents, and probabilities. In Birmingham in the investigations among children I found alcoholic antecedents in 41·6 per cent. of the mentally defective, but only in 22 per cent. of ordinary children. It was noteworthy that only in 1 per cent. of normal children were both father and mother alcoholic, while among the feeble-minded the figure was 5·2 per cent. My figures corroborated Dr. Bevan Lewis's statements about the danger of maternal drinking. The most extensive investigation of this kind is that of Dr. MacNicholl, of New York, in 1901. An enormous number of school children were examined, and the family histories of 3711 traced through three generations with great detail in regard to the taking of alcohol. Dividing them into two classes, viz. those free from hereditary alcoholic taint and those with that taint, we find:

(1) Of those free from hereditary alcoholic taint 96 per cent. were proficient and 4 per cent. were dullards.

(2) Of those with hereditary alcoholic taint 23 per cent. were proficient and 77 per cent. were dullards, and of these more than one third were very deficient.

A close investigation of these records shows that often it is not drinking on the part of the parents, but in an earlier generation, that does the mischief. We sometimes find that when a man drinks to excess his children are not, strictly speaking, feeble-minded, but as they grow up they turn out to be neurotic, peculiar or eccentric; such people sometimes join the ranks of the total abstainers, and yet one or more of their offspring shows regular amentia. The suggestion that alcoholism is to blame naturally causes the keenest distress to such people and their friends. We should always remember the possibility of delay in the full effects of alcoholism, and also, of course, that alcohol is only one of the agents that may lead to mental weakness. As records from the other side of the Atlantic are not always accredited here, I may say that these results are confirmed by the comparative studies of Demme in Berne, and by the observations of Dr. Sullivan, Dr. Ettie Sayer and others in this country. Last October I read a paper in London on "The Relation of Alcohol to Feeble-mindedness" before the Society for the Study of Inebriety; it was published in the January number of the 'British Journal of Inebriety,' so I will now cut a long story short by stating the conclusions I drew then: "The evidence is not clear that alcoholism, by itself, in the father

will produce amentia, but it is quite plain that in combination with other bad factors it is a most unfavourable element, while maternal drinking, and drinking continued through more than one generation, are potent influences in mental degeneracy."

Syphilis is always regarded as a possible factor, but has usually only been detected in quite a small percentage; Dr. Shuttleworth's figure was 2 per cent., and mine, which was one of the highest, 4 per cent. Much important work, however, has been done on this subject by Dr. Mott, whose observations are recorded in the 'Archives of Neurology'; he has proved that looking for syphilitic stigmata in the mentally degenerate case only is quite insufficient. In many instances of amentia he has found no other signs of syphilis in the patient, but has found another member of the family with syphilitic notched teeth, and another without any external sign, but with severe visceral and brain disease. As Dr. Mott himself says, a poison sufficiently powerful to kill the embryo either before or shortly after birth must have a devitalising effect on the offspring that survives, and this he most certainly proves. In the case of the last patient brought to me there was a clear history of syphilis in the father, yet the child was good looking, well formed, and showed no sign of congenital syphilis other than imbecility. The conditions described so far are the outstanding causes of mental defect; it follows, however, from the relations of the germ-cells to their environment, that such conditions as cardiac disease, and, indeed, constitutional diseases of all kind, though insufficient of themselves to determine amentia, are contributory factors; I could put before you family histories clearly proving this.

In conclusion, I will refer briefly to one or two injurious influences not universally recognised. Sir James Crichton-Browne, in the course of his interesting evidence to the Commission, said: "One cause productive of idiocy or feeble-mindedness, operating during utero-gestation, and deserving of careful attention at this time, is attempts to procure abortion. Where that is instrumentally attempted without success, injury may be done to the head of the foetus, and where drugs are used, these may disastrously interfere with its nutrition and growth . . . These attempts at abortion, and also the practices employed to prevent pregnancy with a view to the restriction of the family, are said by all the physicians who gave evidence before the New South Wales Commission to have a detrimental effect on the nervous system of the woman, producing hysteria, neurasthenia and mental disturbance, and thus acting unfavourably on the health of any children who may be subsequently

born." In corroboration of these ideas stands the case of one of my patients, born of healthy parents, and whose later born brothers and sisters were normal; the mother herself told me that she attributed the eldest child's defect to the fact that she was not married till the fifth month; during the earlier part of pregnancy she was in a state of the greatest anxiety, took a large amount of medicine to procure an abortion, and with the same object repeatedly undertook severe physical exertion.

At this point I may remind you that the suggestion that the midwifery forceps are often to blame was disproved by the late Dr. Langdon Down; the more recent idea has been that during birth more harm is done by the prolonged compression due to obstructed labour, or by suspended animation at birth. So far as my own observations have gone the asphyxia of new-born infants has not been the prelude to mental weakness; I hope, however, before long to be able to bring forward definite evidence on this point. Of course, if the asphyxia is due, not so much to difficulty in birth as to inherent weakness, amentia is merely one of the abnormalities we might expect at a later stage if the child survived.

Recently my attention has been directed to *severe* illness of one of the parents shortly before conception as a possible cause; in one instance a lady who was engaged to be married developed typhus fever while abroad; she was dangerously ill, and on recovery her doctor, a shrewd man, advised her to postpone her marriage for two years, as otherwise the eldest child might be abnormal. This advice was discarded and the marriage took place at an early date; the eldest child was a mental degenerate of a peculiarly vicious and immoral type. I have elsewhere recorded two cases in which the blame was laid, and to some extent rightly, on severe attacks of smallpox from which the father suffered some twelve months before the child was born. Whether we admit such an explanation or no we can scarcely deny that the condition of the mother during utero-gestation powerfully affects the nutrition of the fœtus and the start in life of the child. In one of my patients the mental abnormality was due to the mother having typhoid fever at the fifth month. Sir James Crichton-Browne has recorded the case of an idiot whose mother, during pregnancy, had an attack of Asiatic cholera; her other children, born both before and after this idiot, were perfectly healthy. The same authority has also something to say on the possible far-reaching effects of the neglect of breast-feeding, and the use of condensed milk and proprietary foods for infants; the intestinal irritability so induced may, in those who inherit a tendency

to nervous instability, lead to convulsions, which retard cerebral development and may lead to idiocy or be the precursor of true epilepsy. At any rate, the fine edge of talent may be blunted and the mind permanently weakened. It might be ludicrous to ascribe a case to such a cause and to nothing else, but as a last word I would say that evidence is pouring in from all sides that everything which interferes with true hygiene does contribute to increase the present appalling number of incapable members of the community.

Editorial.

THE MEDICAL INSPECTION OF ELEMENTARY SCHOOL CHILDREN.

THE Medical Inspection of School Children is being performed all over the country, and is of such great importance that we have deemed it imperative to devote this number of the JOURNAL to its special consideration. Many different views appear to be held as to what is meant by medical inspection of school children, and in order that these views may be thoroughly understood, we have published the opening paper which contains circular 582 of the Board of Education, and the discussion on the subject at the Section for the Study of Disease in Children at the Royal Society of Medicine, together with circular 576 and the Report of the Board of Education. Upon consideration of the Schedule of Medical Inspection and the notes for the inspecting officer in circular 582, it is obvious that a medical examination of a very searching character is expected. Such an examination as indicated in the circular cannot be performed without the whole of the children's clothes being removed, and yet the Medical Officer of the Board of Education appears to think that to undress children for the purpose of medical examination is superfluous, and that the heart can be properly examined by exposing a small area of skin in the neighbourhood of the left nipple. That the children are expected to be completely stripped of their clothes for the medical examination is shown in note 10 of circular 582, which reads as follows: "The skin of the body should be examined for cleanliness, vermin, etc. . . . At the same time ringworm and other

skin diseases should be looked for." There are many other indications in the notes that this preliminary procedure is considered necessary. It is obvious to every educated medical practitioner that no satisfactory physical examination can be made without complete removal of the child's clothing.

The Board of Education requires a complete examination of the children, and for this purpose has issued a schedule for general use, which contains the *minimum* that is considered necessary for efficient medical inspection. It is suggested that when the ordinary inspection shows that a more searching medical examination is needed a supplementary blank form should be used, in which the defects or diseases should be fully recorded. A complete form for the examination, therefore, has not been issued, and the central authority has left to the local education authority the responsibility of drawing up such a schedule as they may consider will meet the requirements of the Act. These schedules will be different all over the country, and, therefore, the information that is contained in them will be difficult to unravel and scarcely possible to compare. We are strongly of the opinion that it would have been better policy for the Board of Education to have prepared a complete schedule for the guidance of the school examiners, and not to have laid the responsibility upon the local education authority. Whatever be the form of the schedule decided upon by the local authority, the medical officer, if he makes a complete examination of the children in accordance with the "Notes for Inspecting Officer," will have many complaints raised against him by the parents, and it does not appear that he is likely to have the support either of the local or the central authority. He will have to bear all the responsibility and the unpopularity upon his own shoulders. If, on the other hand, the medical officer simply makes a superficial examination of the children everything will go easy for him, but his records will be worthless, and the work that he performs a great waste of large sums of public money.

In the Report of the Board of Education for the year 1907-1908, under the heading of "Medical Inspection" there appears the following paragraph: "The schedule was purposely made comprehensive, and its apparently detailed character is not inconsistent with the state-

ment in the memorandum that the inspection of a child should not *on the average* take more than a few minutes. The experience of those local education authorities who have made substantial progress with the work has confirmed the Board's opinion in this respect." We entirely disagree with this view, for we are strongly of the opinion that if each examination is properly carried out in accordance with the instructions of the Board of Education it must take more than a few minutes on the average. The more the schedule, which contains the minimum amount of facts to be elicited, is studied, the more improbable does it seem that the examination can be performed in such a short space of time.

The detailed examination which is required can only be efficiently carried out by especially trained medical practitioners, and it appears doubtful whether some of the medical officers appointed have had sufficient experience in the diseases of children to be able to perform it. The great discrepancies in many particulars in some of the returns already received prove how widely different the experiences of many of the examiners must be. This, however, will remedy itself, for the experience of the medical officers will increase as they continue to perform their duties of inspection. Until their experience is riper the value of their returns must be small, and therefore it must be a few years before any reliance can be placed upon the statistics which are produced.

The Board of Education has a difficult problem before it in order to make the medical examination of school children thoroughly efficient, but when detailed information has been received from the various local authorities as to the working of the Act, then it will be possible for the inspection to be made more systematic by the Board of Education drawing up a fully detailed schedule to be used all over the country. Unless such a schedule is drawn up we consider that many of the results of the examination of the children will be lost, and thereby much valuable work and public money wasted.

The good results which may arise from a systematic medical examination of elementary school children can hardly be over-estimated, and are thoroughly appreciated by the medical profession, but in order that the greatest benefit may be obtained, the manner

in which the examinations should be performed must be fully discussed, and, therefore, we hope that by devoting this number of the *BRITISH JOURNAL OF CHILDREN'S DISEASES* to the special consideration of the subject, we may help to show how the very important work which is provided for in Section 13 of the Education (Administrative Provisions) Act, 1907, can be best undertaken.

The Royal Society of Medicine.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

Friday, February the 26th, 1909, at 5 p.m.

Mr. SYDNEY STEPHENSON *in the Chair.*

A Case of Cerebral Diplegic Spasticity in a boy, aged 6 months, which came on with rigidity in the back and limbs and retraction of the head, at the age of seven weeks, was shown by Dr. HIGGS on behalf of Dr. CAUTLEY. On admission to hospital three weeks ago there was general rigidity, which varied from time to time, and would come on with spasms with considerable crying. The boy improved on a mixture of bromide and chloral. Mr. Bishop Harman found the left disc unduly red with a few pigment-spots along the course of one vessel. The condition was ascribed to an attack of encephalitis followed by cerebral sclerosis of the motor region.

A Sketch of the Pigment-Spots, which might be termed "congenital warts," was shown by Mr. BISHOP HARMAN.

A Boy, aged $4\frac{1}{2}$ years, suffering from Abdominal Tuberculosis was shown by Dr. HIGGS on behalf of Dr. CAUTLEY. The abdomen was enlarged with a band stretching across the upper part, giving the impression of a coiled up and matted omentum containing caseous matters. He had been treated with tuberculin. The opinion of members was asked on the advisability of attempting the removal of the caseous matter by surgical means, or on a continuance of the general methods of treatment and larger doses of tuberculin.

Dr. MILNER BURGESS said that if the lungs were not affected he would advise operation.

Dr. HIGGS replied that although there was no evidence of infection of the lungs he thought the case should not be operated upon, as some of the masses were probably due to inherent coils of intestine and contained caseous glands.

A Mongolian Imbecile, aged $7\frac{1}{2}$ months, was shown by Dr. HIGGS on behalf of Dr. CAUTLEY. The case showed brachycephaly, a large fontanelle,

palpebral apertures sloping upwards and outwards, inability to sit up, placidity and good nature.

A Child, aged $1\frac{3}{4}$ years, with a Soft, Doughy Swelling situated over the right half of the vertical portion of the frontal bone, and extending into the right upper eyelid and also into the temporal and parietal regions, was shown by Mr. SYDNEY STEPHENSON. It was adherent to the overlying skin and a cord-like feeling can be made out in some parts of it. The child is said to have attended the Moorfields Hospital for buphthalmos, and was brought to hospital on January the 21st with acute inflammatory cedema of the right upper eyelid. It was impossible to say for certain what the condition was, but he thought that it might be a plexiform neuroma, and hoped to excise a small portion of the tumour for microscopical examination.

A Child, aged 2 years, with Absent Abdominal Muscles, was shown by Mr. W. M. MOLLISON. The abdomen was very pendulous and the walls thin and lax, the abdominal walls being easily felt even when the child cried. The bowels kept regular and there was no difficulty in micturition. No electrical response could be obtained from the abdominal wall. There did not appear to be any distension of the bladder or thickening of the ureters.

Dr. LANGMEAD said that there were about eighteen cases on record. Usually there was much distension of the bladder and thickening of its walls, with palpable ureters. He believed that most of the cases had died in early infancy; the present one was an exception in that respect.

A Child who had suffered from Acute Epiphysitis of the Lower End of the Femur at the age of 1 year and 7 months was shown by Mr. LOCKHART MUMMERY. After operation the abscess cavity remained at the lower end of the diaphysis, which was scraped out, washed with strong formalin and filled with sterilised paraffin wax, the wound being stitched up again. The general health of the patient was good, but a small sinus remained from which a little clear fluid and occasionally some of the wax was discharged for about six months. It is now two years after the first operation and there is no appreciable deformity of the bone or shortening of the limb, and X-ray photographs show that the cavity in the bone has almost disappeared. The infection was a mixture of streptococci and staphylococci.

A Case of Talipes Calcaneus treated by splinting with a good result was shown by Mr. LOCKHART MUMMERY.

A Case of Hirschprung's Disease, or chronic dilatation of the colon, was shown by Dr. O. GRÜNBAUM. A child, aged 4 years, was admitted to hospital in August, 1908, for fits and constipation. The abdomen was enormously distended, the skin being tight and the superficial veins prominent. On administering an enema an enormous result was obtained, and on repeating this at intervals the child returned to a normal condition. He has been re-admitted twice since with a similar condition. Improvement followed rapidly each time upon the administration of enemas. The risk of colectomy was so great that Dr. Grünbaum, having consulted with his surgical colleague, considered that so long as the child can be kept in a healthy condition with suitable treatment no operation should be done.

Dr. G. A. SUTHERLAND said that all the cases he had seen had died. As the prognosis was so bad, and the patient was now in such a favourable condition, it would be well to operate now.

Mr. LOCKHART MUMMERY said Dr. Sutherland spoke lightly of operation, but what operation should be done? The mortality of colectomy in a number of cases in this condition which he had collected was 75 per cent.; that was because one could not bring the bowel up and make a spur of the abdominal wall. All that could be done was to form a fæcal fistula at the dilated portion of the bowel, and in most cases the bowel had torn away from the abdominal wall and the patient had died of peritonitis. The only operation likely to give permanent results was the excision of the dilated portion of the colon. This was a serious proceeding, but even if successful the colon might become re-dilated. He quoted four cases in which this had occurred. In a case which had gone on to adult life, a man, aged 23 years, he had done appendicostomy, the bowel being washed out daily. It was now six months since the operation, and the man had had no obstruction.

Provincial Societies.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.

February Meeting, 1909.

The Medical Inspection of School Children.—Dr. CHEETHAM gave a paper on this subject in which he gave a *précis* of the 1907 Act and the circular letters 576, 582 and 596 of the Board of Education, pointing out that in the circular letter 576 the Board emphasises the fact that school inspection should not be divorced from public health. Regarding the much-debated question whether in county areas the school inspection should be performed by the district medical officers of health or full time officers he declared in favour of the former, adducing the following facts:

(1) They are men of experience accustomed to deal with children and their ailments; they are on the spot, and generally acquainted with the family history of the children. (2) The desirability, from the public health point of view, of getting them into the schools, as information would often be obtained of great value. (3) Prevention of overlapping of duties and possible friction. (4) Prompt attention to closure of schools and exclusion of affected children, as the notifications are sent direct to him. (5) Saving in travelling expenses.

He then dealt with the administration of the Act in the North Riding of Yorkshire, the area of which is 1,358,101 acres, population 254,829, with 398 public elementary schools, 79 situated in urban areas and 319 in rural areas; 16 of the schools have three departments and 29 two departments. There are 47,000 children on the registers and approximately 6000 children join the schools yearly. The original intention of the Education Committee was to appoint all the medical officers of health school officers,

but as one full time officer, representing about one fifth of the county, was unable to obtain the sanction of his authority, a full time lady officer was appointed at a salary of £250, first class contract ticket, and an allowance of twopence per mile for cycle. She commenced her duties on July the 1st. The medical officers of health in urban areas were paid at the rate of one shilling per child examined, and those in rural areas the same, with the addition of a travelling allowance of one pound per school per annum; they commenced their duties on April the 1st.

During 1908, 920 visits were paid to schools and departments, 8755 children examined, of whom 5958 were found to be suffering from some defect, equal to 68·06 per cent. The average time occupied in examination was 9·7 minutes; 110 children were referred for subsequent examination; 25·39 per cent. of the children had bad teeth. The attendance of the parents at the examination in some schools equalled 70 per cent. In the rural schools one of the first points requiring attention is the drying of the children's boots and clothes.

MIDLAND MEDICAL SOCIETY.

March the 10th, 1909.

A Case of Polyarthritis in a girl, aged 8 years, was shown by Dr. KAUFFMANN, who considered the disease to be identical with that described by Dr. Still.

Mr. LEEDHAM GREEN said that he considered the appearance of the child and the character of the temperature chart suggested that the condition in the joints was of tuberculous origin. This was supported by the fact that there was a small amount of effusion in each pleura, and also by the appearance of the abdomen, which was quite consistent with tuberculous peritonitis. He asked if the urine contained albumen and tubercle bacilli.

Dr. SAWYER thought the case very closely resembled the arthritis deformans in children which was described by Dr. G. F. Still. He said that if a radiograph showed the enlargement at the joints was due to a peri-articular thickening it would be in favour of the view that the condition was not tuberculous. The absence of crepitation and pain on moving the joints was also against the tuberculous origin of the disease in this case.

Dr. SHORT spoke about the value of Calmette's reaction, and said that he did not consider that its absence on two occasions was of sufficient evidence to exclude tuberculosis. He did not think that Calmette's reaction was of much diagnostic value.

Mr. GILBERT BARLING favoured the view that the disease in the child was due to tuberculosis. He pointed out that there was a pathological dislocation of the right hip, and said that he considered this was much more likely to occur in a tuberculosis of the joint than in the chronic arthritis of Still. He thought that the arthritic fluid should be examined for tubercle bacilli and a biological examination made.

Dr. KAUFFMANN, in reply, said that he considered the disease to be identical with that described by Dr. Still, and that the disarticulation of the hip-joint was not against this view. He pointed out that a similar dislocation occurred in a Charcot's joint. He did not think that the appearance

of the child justified the diagnosis of tuberculosis. The urine contained a trace of albumin, but had not been examined for tubercle bacilli. He considered the disease in the joints was due to some microbic infection, but not to that of tubercle or syphilis. With regard to Calmette's reaction he said that all the materials used for the experiment were not of the same value.

Philadelphia Pediatric and Pathological Societies.

Joint Meeting of the Philadelphia Pediatric Society and the Pathological Society of Philadelphia, February the 25th, 1909.

JOSEPH MCFARLAND, M.D., *President.*

SYMPOSIUM ON CHILDHOOD PATHOLOGY.

Antenatal Pathology.—Dr. B. C. HIRST pointed out that the greatest waste of human life occurs in the nine months of intra-uterine existence, the death-rate being 25 to 30 per cent. greater than at any other period in life of similar length. A few of the problems of intra-uterine disease were considered—syphilis, deformities, and the influence of maternal emotions and impressions upon the fœtus. The duty of the physician to advise four years of treatment for the affected parent before attempting to beget children was emphasised, and the advisability of diagnosing syphilis by a study of the fœtal body or of the clinical signs in the living infant was pointed out. Otherwise an indiscrete questioning of the parents would disclose a secret which might disrupt the family.

The influence of maternal emotions and impressions upon the fœtus was discussed. While the prevalent superstition that there might be a photographic reproduction of impressions upon the mother in physical defects of the fœtus should be combated and denied, it is necessary to admit that traumatism and profound emotions can arrest the physical development and affect the psychology of the fœtus, and can even terminate its existence.

Infections of the New-born.—Dr. S. McC. HAMILL discussed the localised infections of the umbilical stump, and that large group of cases ordinarily described as infections of the new-born. He commented unfavourably upon the attempts to classify these infections on the basis of their symptomatology. He stated that true melæna neonatorum is almost invariably the result of some form of infection. He did not deny the possibility of certain other factors, syphilis especially, acting in a predisposing capacity. In the light of Lequex's investigations he thinks that the failure to find the infecting organism in these cases has been dependent upon incomplete bacterial investigation. He does not accept the recently expressed opinion that melæna neonatorum is a congenital malformation of the blood of unknown chemical nature. He can, however, conceive of the possibility of the toxins resulting from bacterial infection bringing about chemical alterations which might lead to free osmosis in the capillary vessels, resulting in widespread hæmorrhages. The lowered resistance of the prematurely born or weak infant, the desiccation and shedding of the umbilical stump and physiological processes, such as the early desquamation of the skin and mucosa,

together with the undeveloped condition of the lymphatic system, throw open the portals of entry and lead to ready infection when these infants are carelessly handled. He considers the most common portals of entry are the skin, the umbilical stump, and the gastro-intestinal tract. The pathological picture in these cases is congestion, hæmorrhage, and the usual changes resulting from infectious conditions.

The Pathologic Anatomy and Pathogenesis of Status Lymphaticus in Children.—Dr. JOHN HOWLAND, of New York, read this paper by invitation. He said that the consideration of thymus hypertrophy is rendered difficult by the lack of a normal standard. In the first two years of life this is variously given as anywhere between five and thirty grammes. Illness causes great atrophy of the gland, while in sudden death it is believed to be frequently enlarged, and therefore the only conclusive method of determination is from patients suffering violent death, and these in the first two years of life are too infrequent to establish a standard. Fifteen grammes probably represents approximately the average weight throughout the first two years of life, and yet it seems probable that glands weighing considerably more than this are not very unusual, and that the pathological complex known as status lymphaticus is very much more common than is usually supposed. Richter believes it to be, perhaps, the regular finding. The majority of authors do not subscribe to this view, and there is general unanimity in the acceptance of Paltauf's views in regard to status lymphaticus as a pathologic entity.

There has been much discussion in regard to the evidences of compression at autopsy. In a few instances this has undoubtedly been present, but most authors with extensive post-mortem experience believe it to be rare.

As to the cause of death opinions vary greatly. A few authors (the most recent of them being Warthin) believe tracheal compression to be responsible for death; the majority oppose this view, but as yet no satisfactory explanation has been afforded. Paltauf only laid stress upon the type of individual dying suddenly.

Strehla's experiments upon hyperthymisation of the blood lack confirmation. Recent experiments show that the glands, normal or pathologically enlarged, are no more toxic than other animal tissues. It has been suggested that the thymus hypertrophies to compensate for the lymphatic glands, which are frequently found to have degenerated. Recent studies of normal thymus glands by Stöhr and Hammer indicate that the thymus is not composed of lymphoid tissue. If this is so such an hypothesis seems altogether improbable. At the end of twenty years after Paltauf's original paper a satisfactory explanation of the cause of death is entirely lacking.

Tumour Growth in Childhood.—Dr. DAVID REISMAN said that it is impossible to give figures that will express the frequency of tumours in childhood as compared with their frequency in adult life. All tumours are represented in children. The connective-tissue tumours, fibromas and lipomas are rare. Chondromas occur much oftener in combination with other tumours than as pure cartilaginous growths. Angioma (hæmangioma) is frequent and is practically always congenital. It is most frequent on the skin but is also found in the viscera and even in the nervous system. Chylangioma is rare. Osteomas are occasionally found in children, but it is difficult to distinguish at times between a genuine osteoma and an exostosis. Neuromas are comparatively frequent in childhood, their favourite seat being the eye, especially the eyelid. Myoma is a rare tumour

in children. Rhabdomyoma is met in the kidney and occasionally in the heart. Liomyoma is exceedingly rare.

Sarcoma is probably the commonest tumour of childhood. It may be of any of the histologic varieties, though the round-cell and lympho-sarcoma are most frequent. Giant-cell and melanotic sarcoma are rare. The bones seem to be the place of election, though it is frequent in the brain. In the internal organs sarcoma is rare in children, but when it occurs it is frequently congenital. Under the head of "sarcoma" Dr. Reisman considered chloroma, which occurs chiefly in the temporal and parietal regions of the skull and in the hard palate, sternum and ribs. It may be really a form of leukaemia and not a tumour in the strict sense. Glioma is common in childhood, and in the brain is nearly as frequent as sarcoma.

The most common of the benign epithelial tumours is the papilloma, especially common in the larynx. Carcinoma is rare. After deducting doubtful cases there remain only a few cases the cancerous nature of which cannot be questioned, occurring in the stomach and intestines. Hypernephroma is a peculiar tumour in the kidney generally derived from misplaced adrenal tissue. It is fairly common in childhood and has a tendency to give metastasis to the bones. The so-called mixed tumours are most commonly found in the kidney, producing enormous growths. Cysts also occur in children—parasitic, retention, proliferative and dermoid cysts. Finally, true teratomas, being congenital, are naturally most frequent in early life.

Neuropathology in Childhood.—Dr. D. J. McCARTHY read a paper on neuropathology in childhood, with a consideration of pathological factors in some cases of retarded mental development. He said that neuropathology in childhood does not differ essentially from that in adult life. We may find the same pathological processes, but the results of these processes, so far as disturbance of function is concerned, are somewhat different, due in part to the incomplete development of the infantile nervous system. Pathological processes which cause relatively minor disturbances in adults may cause serious disturbance or even perversion of function when they occur in infancy.

Retarded mental development has been studied clinically, embryologically, and pathologically. Clinically the results are insufficient and unsatisfactory. Heredity, prolonged labour and instrumental delivery are of importance. Dr. McCarthy then discussed the pathological conditions found before birth and afterwards upon which retarded development seemed to depend. The correlation between permanent as well as temporary visceral disturbances and minor mental and nervous conditions should be remembered.

Correspondence.

MEDICAL INSPECTION OF ELEMENTARY SCHOOL CHILDREN.

To the Editor of THE BRITISH JOURNAL OF CHILDREN'S DISEASES.

SIR,—In *re* the meeting at the Royal Society of Medicine, at which Dr. Carpenter delivered his carefully thought-out address on the subject of the medical inspection of elementary school children. Dr. Carpenter was right, and his critics were wrong; he advocated idealism, they advocated

humbug. The gentlemen who held a brief for the Government proved that it was "a few minutes'" inspection and not an examination, and to my mind absolutely useless, and as ratepayers we ought to object to our money being literally thrown away. I see that the nation paid £238,796 for inspection in 1907-8. Another critic put his infantile opinion against Dr. George Carpenter's twenty-three years' experience. On his own showing, he said, all our eyes were wrong, therefore all our other organs were wrong, but it did not matter.

It would be better for the nation to pay, say, 10s. 6d. for one good examination than for three inspections of "a few minutes" each. Take the class of domestic servants in this country and sea-side district. After ten months' observation I find a class of weaklings—small, undeveloped, bad teeth, indigestion, anæmia, ear disease (deafness), adenoids, enlarged tonsils, hypertrophic rhinitis—or they are degenerates and become pregnant or thief. It takes me always thirty to forty minutes to see a patient, and yet I make many mistakes. What must a man with a lightning diagnosis of a "few minutes" make? Hamlet says:

"Diseases, desperate grown
By desperate appliance are relieved
Or not at all."

I hope Dr. Carpenter will be supported by The Society for the Study of Disease in Children. Herbert wrote:

"Dare to be true, nothing can need a lie;
A fault which needs it most grows two thereby."

I am, Sir, yours truly,

W. MILNER BURGESS.

"Ellerslie," Fourth Avenue,
Frinton-on-Sea.

To the Editor of THE BRITISH JOURNAL OF CHILDREN'S DISEASES.

SIR,—In reference to the discussion of the above subject at the meeting of the Royal Society of Medicine on February the 26th last, at which I was present, some of the speakers who followed the opening speech so much confused the issues that I hope you will allow me to make some remarks now that I have been able to study the documents presented to the meeting—a task that was impossible at the time owing to their complexity.

The facts appear to be that the Board of Education issued a circular and schedule dated January 23rd, 1908, showing the minimum of information required to be ascertained by the inspector, which amounts to a very full account of each child's body in reference to development and disease, and after giving the minimum required by the Board it further leaves considerable latitude to the inspector. This part of the circular must necessarily have been drawn by a medical man, and he has done his work well.

It would appear, however, that others had a hand in framing this circular who insisted on the insertion of their conflicting ideas, and thereby made the document absurdly contradictory in its directions and commands.

Thus after demanding a full account of the state of the child, which necessitates a very searching examination and inquiry—(the details of which the eminent physician who opened the discussion had enumerated by means of a printed form)—the Board goes on to say *inter alia* that the examination should only take a few minutes, and that the child should only have its clothes loosened or only be partially undressed.

Now, it is evident that "Too many cooks spoil the broth," and that this circular is ridiculous owing to these conflicting orders, and the consequent impossibility of carrying out its directions.

It appears to me that this *impasse* was what Dr. Carpenter wished to emphasise in his speech, but some of the subsequent speakers appeared to think that he was endeavouring on his own account to force on the community an immediate thorough examination of all school children, and one speaker went so far as to say that Dr. Carpenter wished for examination while the Board only required inspection, which latter is negatived by the nature of the Board's schedule, and another to speak of Dr. Carpenter's schedule of examination, which is obviously necessary to carry out the Board's requirements, as a result of his "misdirected ingenuity."

Now what I want to emphasise is that the points which require arrangement and elucidation when extricated from the confusion are:

(1) The emendation of the Board's circular to make it a practical direction to its officers.

(2) The amount of examination possible under present circumstances.

(3) The amount of examination and information which should be aimed at in future when the fears and prejudices of parents are overcome.

I am, Sir, yours truly,

SHEFFIELD NEAVE.

Mill Green Park,
Ingatestone, Essex.

To the Editor of THE BRITISH JOURNAL OF CHILDREN'S DISEASES.

SIR,—The time is certainly ripe for an expression of opinion from the medical profession in this matter of inspection of children, and it can take no better form than a discussion by so representative a body as the Section for the Study of Disease in Children of the Royal Society of Medicine. The pity is that no such discussion was invited before the order was issued. In the case of any other profession no body of laymen, such as the Board of Education, would have presumed to promulgate a scheme to carry out highly technical work in a very large scale without at least making an attempt to obtain guidance as to the best method from representatives of those who would be called upon to do the work. It must not be forgotten that the desire for an organised, routine medical examination of children originated with us, and is an old idea amongst those who have had much to do with the care of children; and apart from the advisability of getting the ideas of specialists on such a subject, one might call the attention of the powers that be to the fact that fairness and courtesy still exist, though perhaps they are becoming scarcely discernible in the treatment of our profession by those who see their way to making any use of us.

As it is, it would seem to be a stormy voyage upon which has started this child of the Board of Education. As a profession we must decline to acknowledge any responsibility for it—this scheme, conceived in ignorance and prematurely thrust forth into the world, apparently on the advice of those who have little practical experience of the care of children of any kind. Unwieldy as the "experiment" and inadequate as "the masterly production," which its few friends alternately claim it to be, according to the set of the tide of criticism, this poor child is at present tossed in its frail bark of red tape between the Scylla of increasing rates and the Charybdis of scientific requirements.

In my dual capacity of general practitioner and member of an education committee which has to provide for 4000 children I have been much interested in this matter, and have watched as far as possible the discussions that have taken place as reported in the press. Everywhere it is clear that economy is the first consideration, not efficiency. And that is the fault of the scheme, not of the committees to whose ill-fortune it has fallen to carry it out. It is absurd to expect the requirements of the Board "above" to be thoroughly carried out with the means at the disposal of local education committees. Here and there enthusiastic workers will carry out the inspection on a scientific basis, and, as Dr. George Carpenter has shown, very soon get into trouble and be thrown over by the Central Board.

Statistics based on data furnished by the present system of inspection cannot have any scientific value, for there is no possibility of uniformity. They are collected by three quite different classes of workers: The specialist at school inspecting, who does nothing else; the part time medical officer of health, who is also a general practitioner; and the whole time medical officer of health, who has usually long given up medicine, if, indeed, he ever practised it more than sufficient to get qualified.

Beyond statistics it does not seem clear exactly what benefits are likely to accrue to the rising generation. There is certainly considerable acceleration in the pace at which cleanliness is overtaking or overwhelming a certain class, but with no inspection in immediate prospect will the individual cases of uncleanness improve at any greater pace than has been evident for some years past with modern education and sanitation? It seems of small value to hunt for defects which one has no power of remedying. The law which tells a man that he is a better judge than experts as to whether his child should be vaccinated is not in a position to turn round and say that the same child has such and such a defect, and he must do so and so and likewise expend much money to remedy that defect. He may say, "I do not agree that there is anything wrong with the child," or "Quite so, it is necessary; I have no money to expend on such objects. If the State thinks it ought to be done let the State do it and pay for it." There is certainly the clumsy legal machinery of the Cruelty to Children Act, but who is going to be the first to put that in motion? And where is the line to be drawn? The manner in which the Board of Education frankly urges on local authorities to make every use (and abuse) of existing medical charities is nothing less than brazen impudence. In the same spirit the chairman of my committee remarked, in reply to my protest against the pitiful sum which was suggested as sufficient salary for the inspector in this district, "Oh come, Doctor, we never have to appeal in vain to the generosity and patriotism of your profession!"

If this scheme is not completely modified it must end in the municipalisation of medicine, and it is absolutely necessary that those holding hospital appointments should loyally join forces with the general practitioners in firmly withstanding the encroachments of an official department whose wish, perhaps, is natural to get as much as possible for nothing.

I must apologise for the length of this communication, but the subject is so large that it is very difficult to know where to draw the line. There are many points I should like to have called attention to, but fear I have already worn out your patience.

I am, Sir, yours truly,

T. DAVYS MANNING, M.B.

Rodwell Lodge, Weymouth.

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Original Articles.

A CASE OF CHRONIC RHEUMATOID POLYARTHRITIS
IN A CHILD.

By O. J. KAUFFMANN, M.D.,

Hon. Physician to the Queen's Hospital, Birmingham.

ELLEN W—, a girl, aged 8 years, recently an in-patient at the Queen's Hospital, was very small for her age, of the dark, fine, scrofulous type, with long eyelashes and flushed, shiny, polished-looking cheeks. She was practically a cripple as far as the lower limbs were concerned; in the arms there was some power of movement, and she knitted industriously and well, though slowly. She showed enlargement of nearly all the joints of the body, those of the toes on both feet and the maxillary joints being the only exceptions. The swollen joints were, generally speaking, of fusiform shape, not painful, not tender on pressure, not grating when the bone ends were pressed together, and all, with the exception of the right hip, permitted of a certain amount of passive movement. Volitional movement was impaired owing to the very great wasting of the muscles. The right hip was ankylosed and partly dislocated, and presented obvious osteophytic growth round the articulation. This was the only articulation which gave rise to much spontaneous

pain while the patient was under observation. The rest of the joints appeared to give her very little or no pain, though exact information on this point was difficult to obtain, owing to her patient and reticent character. To the touch all the enlarged joints were elastic, semi-fluctuant, and soft. Now and again the

FIG. 1.



right knee was hotter than the left, but, on the whole, there was no perceptible heat.

The spleen was palpably enlarged and extended below the ribs with inspiration, not tender.

The superficial lymph-glands all over the body, with the exception of the supra-trochlear and popliteal, were enlarged, varying in size

from that of a pea to a Spanish nut, not tender, and not showing any suppurative tendency.

Liver moderately enlarged, not hardened.

No evidence of enlargement of the thymus.

The heart presented no abnormality, excepting a rate of 152.

In the *lungs* varying physical signs were noted from time to time

FIG. 2.



during the patient's stay in hospital which were strongly suspicious of tubercle, though at no time was there any evidence of cavitation; nor did she expectorate, nor even cough up any sputum. Twice the Calmette ophthalmo-reaction was tried, with negative result, and in view of this fact, and seeing that the pulmonary condition grew better rather than worse, I incline to attribute the varying physical signs to a wandering broncho-pneumonia.

The temperature during seven weeks was never steady, though, on the other hand, it was never high. It varied from 99° to 101° F. in the first three weeks; from 97° to 99° F. in the succeeding four weeks.

The urine consistently showed a heavy deposit of urates and a very faint haze of albumin, but no casts could be discovered.

The history was as follows: Up to the age of ten months the child had been strong and healthy. She had had three several attacks of pneumonia at one, two, and three years of age. At four she had r  theln, and shortly after had vague pains in the legs, not accompanied by any swelling of the joints. The enlargement of the joints did not occur till she was six, *i. e.* two years after the pains in the limbs had appeared; and wasting of the muscles—no doubt purely consecutive from the arthritis—appeared almost at once after the joints had commenced to enlarge. The articular and muscular condition had slowly increased since then, leading to such crippling that she could not stand. The general health, too, had slowly become poorer, although her appetite had always been, and still was, good.

The patient's mother had in childhood suffered from chorea, but this was the only point in the family history bearing upon the case.

Treatment proved, as was expected, quite useless. An elastic bandage applied above the right knee led to some enlargement of the circumference of that joint, though causing no pain, and, since the enlargement thus produced did not recede, no further attempt was made in this direction, and only general treatment by means of cod-liver oil and iron was kept up.

The case tallies very closely with one class of "rheumatoid arthritis in children," as described by Dr. Still. The suggestion of its being due to a chronic pneumonic condition lies close at hand, and is enforced by both the history of repeated pneumonia and the persistent pneumonic condition still present, although the features of the case do not resemble those ordinarily met with in "pulmonary osteo-arthritis."

The skiagrams of the wrist and knee (Figs. 1 and 2), kindly taken by Mr. Emrys-Jones, show the bulk of the enlargement to be due, not to bony overgrowth, nor to great swelling of the synovial membranes, but rather to inflammatory infiltration of the peri-articular structures.

A CASE OF GENERAL SUPPURATIVE PERITONITIS
DUE TO GANGRENOUS APPENDICITIS AND FOL-
LOWED BY SUBPHRENIC ABSCESS; TWO OPERA-
TIONS; RECOVERY.

By A. J. CLEVELAND, M.D., M.R.C.P.,
Hon. Physician, Jenny Lind Infirmary, Norwich.

A GIRL, aged $9\frac{1}{2}$ years, was admitted under me on June the 11th into the Jenny Lind Infirmary for Children (Norwich). She was in very good health until six days before admission, when she complained of abdominal pain, chiefly over the appendix. Next day she had sickness and diarrhœa, the stools being yellow and frothy.

On admission she had all the typical signs and symptoms of a well-established general peritonitis—anxious expression, distended and resonant abdomen, not moving with respiration; muscles rigid. Temperature 101° F., pulse 148, respirations 60.

My colleague Mr. Everett saw her with me, and we decided on an immediate operation. He opened the abdomen through a median incision, and a quantity of pus escaped. There was a good deal of lymph on the intestines, which were considerably injected. A counter opening was made in the right loin, from which a quantity of pus was evacuated. As the child's condition was very critical only a minimum amount of swabbing of the peritoneal cavity with dry gauze sponges was done, and the child put back to bed. A brandy and hot water rectal injection was given. June the 12th.—She was decidedly better. Bowels not open. On June the 13th, the bowels acted freely after some calomel. Her respirations were still rapid, and on auscultating the chest coarse râles and rhonchi were heard at both bases. For the next five days the temperature varied between 102° and 99° F., the pulse-rate between 128 and 150, and the respiratory-rate between 30 and 48. The bowels acted well, and the child took nourishment fairly well, but although both wounds were draining freely her condition was still grave.

On June the 18th there was dulness at the right base, extending upwards in the mid-axillary line as high as the fifth rib, and falling to the normal limit of liver dulness in the middle line in front and behind. Over this area there was at first a patch of distant bronchial breathing with consonating râles, but by next day although the dulness remained unaltered the breath-sounds became normal and the râles disappeared. The child's condition remained

very little altered during the next ten days, except that on June the 22nd she complained of abdominal pain, and had some distension and tenderness, although both wounds continued to drain well.

On June the 28th the persistence of the pyrexia and the general condition of the patient pointed to her having a collection of pus somewhere which was not being drained. The physical examination of the chest did not reveal any cause for the symptoms in the lungs, and I therefore concluded that she had a collection of pus between the liver and the right diaphragm, which would explain the area of dulness already described.

On June the 28th Mr. Everett made an incision over the tenth rib in the posterior axillary line. The diaphragm was exposed and appeared quite healthy. It was incised and numerous adhesions found between it and the liver. On breaking some of these down a fair quantity of pus escaped. The liver appeared to be normal. The wound was drained, and the child made a slow but steady recovery. When seen in November she looked extremely well, and the abdominal wounds were firmly healed.

In every case of general suppurative peritonitis which I have examined in the post-mortem room I have found a collection of pus or purulent lymph between the liver and the diaphragm. Sometimes it appears to be due to a direct extension from elsewhere; in other instances it is to the unaided eye distinct from the general inflammatory process. It is not peculiar to peritonitis following appendicitis.

Although in the case I have just described the rest of the peritoneal cavity was draining well the inflammatory focus above the liver had become shut off, and was undoubtedly causing a persistence of the child's symptoms. Directly it was opened the child recovered.

The other interesting point about the case to me is the fact that, although not operated on till the sixth day after the onset of the disease, the child recovered.

As to the diagnosis. At the operation it was clear that there was general peritonitis; pus and turbid fluid welled up from every direction. The history of onset, the character of the peritoneal exudate, the completeness of the ultimate recovery pointed to the cause being the most probable one, viz. appendicitis, although the appendix was never actually seen.

A CASE OF RHEUMATOID ARTHRITIS IN A CHILD,
AGED 2½ YEARS.

By J. PORTER PARKINSON, M.D.,

Senior Physician at the Queen's Hospital for Children.

DOROTHY G—, aged 2 years and 4 months, was admitted under my care into the Queen's Hospital for Children, on September the 26th, 1908. The personal and family history were good; there was no history or evidence of syphilitic taint, or of tubercular disease. Three months before admission she began to suffer with pain and swelling of both wrists and the left ankle; she was confined to bed, and other joints, such as the knees and left ankle and elbows, became involved. She took food well, but wasted considerably, and as no improvement occurred she was brought to the hospital.

On admission she was pale, with an earthy tint of skin, anæmic, and wasted, weighing only twenty pounds. The skin was wrinkled and inelastic, and there was a brown staining of the deeper layers of the skin, diffuse on the whole, but here and there with detached creases on the dorsal surfaces of both feet, the front of the legs and the front and inside of the thighs, also on the adjacent part of the lower abdomen. This was identical in character, though not in distribution, with the staining seen in rheumatoid arthritis in the adult. The ankles and some of the tarsal articulations, wrists and knees, were swollen and extremely tender. There was some effusion into the joint cavities, but no grating on manipulation; there was also much peri-articular swelling extending above and below the articulations. It was soft and boggy to feel, but did not pit on pressure; the skin was slightly reddened. This swelling is well seen in the accompanying photograph. Skiagrams of the joints showed not the slightest changes in the bones.

The lymphatic glands in the groins and axillæ were much enlarged and tender, some being as large as a small walnut; they were elastic and freely movable. There was some beading of the ribs and general signs of rickets. The heart and lungs were normal. The abdomen was enlarged from flatus; the liver appeared of normal size, but the spleen extended four fingers' breadths below the costal margin and was unduly hard. The urine contained no albumin. Examination of the blood showed 30 per cent. hæmoglobin, with 1,000,000 red corpuscles and 5000 leucocytes to the c.mm. The temperature on admission was normal, but began to

fluctuate daily ; on September the 29th it reached 103° F., and though normal in the morning generally reached 101° F. in the evening.

The joint troubles continued, and by the middle of October the temperature began to show regular exacerbations lasting four or five days, with intervals of comparative apyrexia. Thus from October the 17th to the 22nd the evening temperature rose each evening to 104° F.; from October the 22nd to the 27th it was normal; from October the 28th to November 7th, except for one day, it rose each evening to 104° F.; after this the rises were less high, though from November the 10th to the 17th it rose from 102° to 103° F.; after this the fever abated. During the febrile periods all the symptoms were much more marked, the joint swellings increased, and the spleen and lymphatic glands also became larger.

FIG. 1.



The child lay in a drowsy condition and seemed to be suffering from a general poisoning. After the temperature fell the spleen and lymphatic glands lessened in size, and by January, 1909, appeared to be nearly normal. The joint swellings also diminished, leaving great muscular weakness, but no tenderness nor adhesions. The child was in much better general condition, and the weight, which had fallen to eighteen pounds, rose to twenty-four pounds.

The drug which seemed most to influence the fever and the joint-swellings was salicylate of soda. Having seen the occasional value of rectal injections of anti-streptococcic serum in similar cases in the adult, these were also given, but appeared to have no effect on the course of the disease. Normal horse-serum was also tried with a negative result. No organisms could be obtained from the blood, but the fluid from the joints was not examined.

This case is a well-marked example of a rare disease in the child,

and as such seems worthy of record; the severe exacerbations appeared to point to a periodic auto-intoxication from one or other of the joints, as there was no other lesion to account for them; the gastro-intestinal canal was healthy, and there was no ear discharge or conjunctivitis or other source of infection. The teeth also were healthy.

FIG. 2.



Shows joint swellings, pigmentation of skin, and enlargement of lymphatic glands in left groin.

The pigmentation of the skin, which can be seen in the photograph, has, I believe, not been previously described in the child, but it shows another point of resemblance between the disease as it affects children and adults, and there can be but little doubt that the disease is the same in both, any slight differences being merely those incidental to the age of the patient.

PANCREATIC CYST IN AN INFANT.

By W. H. MAXWELL TELLING, M.D., B.S., M.R.C.P.,
*Assistant Physician to the General Infirmary and to the Hospital for
Women and Children at Leeds; Clinical Lecturer in Medicine
in the University of Leeds; and*

J. F. DOBSON, M.S., F.R.C.S.,
Clinical Lecturer in Surgery in the University of Leeds, etc.

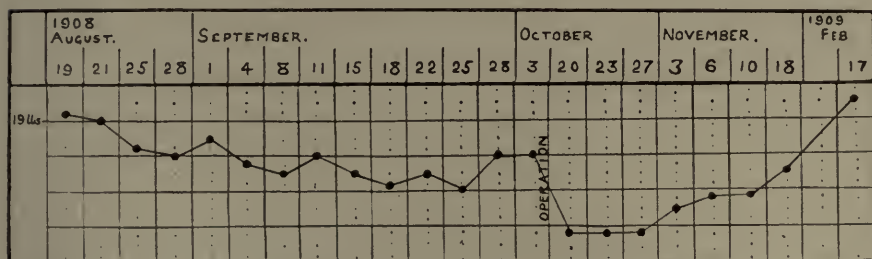
PANCREATIC cysts, from their infrequency, are always of great clinical interest, and we have thought that the following case is worthy of placing on record from the very early age at which it was noted and from the successful result of the operation.

The child, a girl, was admitted to the Women and Children's Hospital on August the 18th, 1908, and was then aged 11 months. The mother stated that the child's abdomen had been noticed to be getting bigger for the past two months, during which time the child had been somewhat fretful and cross, and was occasionally feverish. It had been seen by a doctor at home, who, according to the parents, had either diagnosed or suspected consumption of the bowels. Up to admission there had been nothing wrong with the stools, and it had taken its food very well. On admission the child was in fair condition; the abdomen was a little full. The child was paler than normal but took its food well. The stools were normal. On more detailed examination of the abdomen the girth at umbilicus was found to be $18\frac{1}{4}$ in.; the distension was mainly centrally situated, but was by no means striking—that is to say, one could not have diagnosed the presence of a localised tumour from inspection. There was resonance in the flanks, a dulness in the umbilical region; these percussion effects were not altered by change of position. There was a little fever (100.2° F.) in the evening. The child weighed $19\frac{1}{4}$ lbs. These notes were made on admission by Dr. Mabel Ramsay, the house-surgeon.

When seen by one of us (W. H. M. T.) a few days after admission there could be palpated a deeply situated rounded tumour, approximately in the umbilical region, but so obscure was this at the time that its presence was doubted by several observers who were invited to examine the abdomen. The diagnosis of tuberculous peritonitis was thought to be most unlikely owing to the character of the swelling and the general appearance and good condition of the infant. It was decided to keep her under observa-

tion for a time. The slight fever declined gradually to the normal by August the 29th, and by that date the child's weight had also declined to 18 lbs. On September the 4th the abdomen measured $21\frac{3}{4}$ in. at the level of the umbilicus; the child had a little diarrhoea and was certainly losing ground, though not rapidly. On September the 16th the child was examined under anæsthesia, and a globular swelling, feeling like a cyst, could be palpated with certainty. There was no movement of the tumour on respiration, and practically no movement was possible under palpation. A diagnosis of abdominal cyst was made and an exploratory laparotomy was decided on. On October the 2nd the abdomen measured $22\frac{1}{2}$ in., and the cyst was now easily palpable without the aid of an anæsthetic. The tumour seemed to be about the size of a foetal head.

October the 3rd.—Operation (J. F. D.) : Chloroform was adminis-



tered. The abdomen was opened by a mesial incision above the umbilicus and there at once came into view a large, smooth-walled cyst presenting between the stomach and the transverse colon. The pancreas was palpated throughout its extent, and it was found that the cyst took origin from this organ, near the head. It was considered inadvisable to attempt removal of the cyst and it was therefore drained. On opening it $1\frac{1}{2}$ pints (approximately) of milky fluid, slightly tinged with pink, escaped; the odour was slightly tainted. A piece of rubber tubing was put in the cyst cavity, sewn in, and the abdominal wall closed. The condition of the child was good throughout the operation.

Progress after the operation.—The temperature rose to 103° F. in the evening after the operation, and gradually declined to 100° F. by October the 12th, when there was a further rise to 102.5° F. which declined to normal on the 19th, and thence-after remained practically normal. The child's condition was fair for the first nine days after the operation, it took nourishment well, there was only

slight draining from the cyst, the abdominal distension had practically disappeared, and the temperature (as noted above) was steadily declining, until an attack of diarrhoea and vomiting, which lasted four days, caused the sharp rise noted above on the 12th. With the exception of this incident the child's progress towards recovery was uneventful. On October the 29th the tube came out, leaving a sinus about $1\frac{1}{2}$ in. deep, with practically no discharge. By November the 9th everything was soundly healed. The child went home on November the 21st, apparently quite well. She was re-admitted to the hospital on February the 17th and her general health, as well as the local condition of the abdomen, was perfectly satisfactory.

Examination of the cyst fluid.—The fluid was milky, slightly tinged with blood, and had a faint, tainted smell; alkaline; sp. gr. 1025. On boiling became nearly solid, with coagulation of albumin; no sugar was present. No ferment action was obtained. Microscopically there were pus cells, some blood cells, and a quantity of homogeneous *débris*. No organisms were seen. There was no evidence of hydatid disease. Cyst wall showed evidences of a lining of columnar epithelium.

Though cysts of the pancreas have been noted as a congenital lesion they are extremely rare. Without an exhaustive investigation of the literature the youngest age at which, so far as we are aware, a case has been recorded is six months (Railton).^{*} In our case abdominal enlargement was noted by the parents at nine months, so that it is practically certain that the cyst existed for some considerable time before this. Its rapid progress while under observation is also a noteworthy feature. The number of cases on record during infancy is too small to allow of our expressing an opinion as to whether this is a frequent symptom. In later life rapid enlargement is the exception rather than the rule. The successful result of the operation at this age is also very encouraging.

Diagnosis.—Before the abdomen was opened the diagnosis of abdominal cyst was made with confidence, but the nature and localisation of that cyst was a matter of uncertainty. Pancreatic cyst, of course, was suggested as a possibility, but opinion inclined to an omental or mesenteric cyst as being the most likely. Hydatid cyst at this age and undergoing this rapid progress was extremely unlikely. A tuberculous peritonitis was certainly excluded, and from the definiteness with which the cyst could be felt after a time a localised inflammatory effusion was most unlikely. The position

* 'Nothnagel's Encyclopædia,' English edition.

of the cyst in the mid-abdomen is one which is recognised, and is both described and figured in the recent work of Robson and Cammidge.* In many recorded cases the pancreatic origin of an abdominal cyst has been open to a certain amount of doubt, but in this case the situation in which the cyst presented, its immobility, the fact that it could be traced directly to the pancreas, and that it was free from all other structures, make this origin quite certain. The absence of ferments has been conclusively shown to be of not infrequent occurrence in certain pancreatic cysts; and in this case the fluid in other respects, together with the character of the cyst wall, was quite consistent with the diagnosis.

THE FREQUENCY OF PULMONARY TUBERCULOSIS IN CHILDREN.

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 the Children's Hospital, Birmingham.*

I PURPOSE in this paper to deal chiefly with phthisis of the adult type as it presents itself in children, because we are receiving now for the first time the reports of the medical inspectors of school children from all over the country, and in these reports the frequency of tuberculosis of the lungs varies considerably. So great is the discrepancy in the figures of the different examiners that one is naturally led to the conclusion that in many cases errors in diagnosis must have been made. Some of the reports of the medical inspectors point out that phthisis of the adult type in an early and latent stage is of common occurrence among school children, while others that it is very rare. The greatest number of cases are recorded in the report of Dr. Mary Hamilton Williams to the Worcestershire Education Committee, for in an examination of 1507 children, phthisis is diagnosed in 234, or 15·5 per cent.—75 among boys and 159 among girls. This great frequency of the disease in children she has also maintained in a paper, full of statistics, but containing many fallacious arguments, in the 'British Medical Journal.'† The number of instances of phthisis in children discovered by the medical officers who have examined the children attending the elementary schools

* 'The Pancreas: its Surgery and Pathology,' p. 496.

† 'Brit. Med. Journ.,' February the 13th, 1909.

in the city of Birmingham is far less, but still more than I think will be proved eventually to be the case. Dr. G. A. Auden, the medical superintendent, reports that pulmonary tuberculosis was diagnosed in 31 children as the result of an examination of 10,000 children—a percentage of 0·31. He also reports that there were 39 doubtful cases of tuberculosis of the lungs. Dr. Bostock Hill reports 14 cases in 3175 examinations in Warwickshire, or 0·44 per cent. In Dunfermline Dr. Bridges reports 3 cases in 2240 children, or 0·13 per cent.; in Derbyshire Dr. Sidney Barwise reports that 0·21 per cent. were found to be suffering from phthisis among 10,057 children; and in Wrexham among 1546 children Dr. D. L. Williams reports that 1·6 per cent. were affected. The following figures are taken from reports for the year 1906. Among 709 children at Oldham who were especially referred for examination Dr. Wilkinson found that 2·3 per cent. were suffering from phthisis, and among 1028 children at Blackburn, also especially referred for examination, Dr. Greenwood reported that 6·2 per cent. were phthisical.

This paper is based upon my examinations of 8000 children under the age of 15 years who attended the out-patient departments of the General and the Children's Hospitals, Birmingham, and upon 244 post-mortem examinations, which have been performed by myself, on patients dying in the General Hospital from all causes below this age. The ages of the children examined at the General Hospital ranged from a few days to 15 years, and those at the Children's Hospital to 12 years only. The following table gives the result of the examinations.

	General Hospital. 1615	Children's Hospital. 6385	Total. 8000	Percentage.
Children examined				—
Diagnosed as phthisis of the adult type	9	6	15	0·19
Doubtful cases of phthisis of the adult type	7	4	11	0·14

Of the 15 children in whom a diagnosis of phthisis was made, 4 have already become quite well again, so that it may be fairly presumed that the lung affection was not of tuberculous origin. The condition of another of these children has also improved; the illness was of long duration, and there was frequently a little expectoration, which when examined on one occasion was not found to contain tubercle bacilli. This patient does not at the present time seem to be suffering from phthisis, but from a mild form of bronchiectasis. The number of cases in which phthisis was diagnosed is reduced, therefore, to 10, or 0·125 per cent. There were 11 other children in whom the result of the first examination left a doubt as

to whether phthisis was present or not. One of these was considered later to be suffering from bronchiectasis, while many of the others improved under treatment and were eventually lost sight of. All the others became quite well, and so seemed to disprove that they had ever had phthisis.

There were other cases of tuberculosis of the lungs, but in them it was either associated with tuberculous lesions elsewhere in the body, or the condition followed a broncho-pneumonia which was tuberculous from the beginning. There were at least twelve cases of generalised tuberculosis in which the lungs were affected, but I do not know the exact number, as most of them were admitted directly into hospital as in-patients, without there being any accurate record as to the lung condition in the notes of my out-patients. In two cases of tuberculous peritonitis which were treated as out-patients there was undoubtedly tuberculous affection of the lungs. Of other children suffering from tuberculous peritonitis who were admitted as in-patients some were subsequently shown to have the lungs involved. There were three cases of broncho-pneumonia, which on account of the extreme emaciation of the children and the duration of the illness, were considered to be tuberculous.

A large proportion of the children attending at a hospital are naturally below the school age, but if only 10 out of 8000 of these children, all of whom were suffering from some illness, had phthisis of the adult type, a percentage of 0.125, it must naturally follow that a much smaller number suffering from this pulmonary affection will be found in school children of whom the great majority are in good health.

The figures recorded above show an important point, and that is, when phthisis occurs in children it is present in the older ones. Out of 1615 cases at the General Hospital with an age limit of 15 years there were 9 cases, and out of 6385 at the Children's Hospital with an age limit of 12 years there were only 6 cases. It is extremely rare to find phthisis under 10 years of age, and the greater number of the cases at the General Hospital were just under 15 years of age.

Although I cannot prove it by actual figures, yet I am of the opinion that tuberculosis of the lungs, when present in children, occurs far more frequently in an acute than in a chronic form. Pulmonary tuberculosis in children is, in the great majority of the cases, either a part of a generalised tuberculosis in which the condition in the lungs is one of miliary tuberculosis, or it is a tuberculous broncho-pneumonia. The latent phthisis which is found in

adults is very rare in children, and I feel sure that I have more often diagnosed it to be present when it is not there, than that I have missed it when it existed. I think that a very fair estimate among all children up to the age of 15 years attending at the out-patient department of a hospital would be about 1 in 1000. The children suffering from phthisis go from one hospital to another and so tend to swell the numbers of individual observers. If a fair proportion among out-patients be 1 in 1000, a much smaller proportion should be present among children at school, and yet the returns of the medical inspectors of school children show even an increased proportion of phthisis among their children than is found at the hospitals.

Post-mortem evidence is of far more value than the evidence which can be obtained from clinical examination, and therefore I have made an analysis of 244 post-mortem examinations which I have performed myself upon children dying under the age of 15 years during the two years I was pathologist at the General Hospital. There were 22 cases in which tuberculosis of the lungs was found, and the following table gives the result of the post-mortem examination in each of these cases.

GENERALISED TUBERCULOSIS (13 cases).

No.	Sex.	Age.	Condition of lungs.	Bronchial glands.	Mesenteric glands.	Other organs affected.
1	M.	3	Miliary tubercles, numerous small foci of caseation, and in places recent small cavities	Affected	Affected	Tuberculous peritonitis, miliary tubercles, liver, spleen, and kidneys.
2	M.	4½	Miliary tubercles only	..	..	Liver, spleen, peritoneum, meninges.
3	M.	$\frac{3}{12}$	Miliary tubercles only	..	..	Meninges, intestinal ulceration.
4	M.	1	Miliary tubercles, small cavity lower lobe on right side, recent	..	..	Liver, spleen, kidneys, peritoneum.
5	F.	1½	Miliary tubercles only	..	..	Liver, spleen, kidneys, peritoneum, meninges.
6	F.	4	Miliary tubercles only	..	..	Widely disseminated.
7	F.	$\frac{10}{12}$	Miliary tubercles	..	..	Widely disseminated, meninges.
8	M.	13	Miliary tubercles, small foci of caseation	..	..	Peritoneum.
9	F.	$\frac{1}{2}$	Miliary tubercles, large cavity lower lobe of right lung	..	..	Widely disseminated.
10	F.	$1\frac{4}{12}$	Miliary tubercles only	..	..	Widely disseminated.

GENERALISED TUBERCULOSIS—*continued*.

No.	Sex.	Age	Condition of lungs.	Bronchial glands.	Mesenteric glands.	Other organs affected.
11	M.	1 $\frac{3}{4}$	Miliary tubercles, large caseous mass in apex of lower lobe on left side. Pleuritic adhesion left side	Affected	Affected	Peritoneum, spleen, liver.
12	F.	5	Miliary tubercles only	„	„	Middle-ear disease, meninges, peritoneum, salpingitis.
13	F.	12	Miliary tubercles only	„	„	Tuberculous ulceration of intestines, peritoneum.

TUBERCULOUS MENINGITIS (3 cases).*

1	F.	8	Few calcareous nodules apex of right lung. Old pleuritic adhesions at base of right lung	Affected	Normal	Normal.
2	F.	7	Miliary tubercles. One large caseating area in upper lobe of right lung	„	Affected	„
3	F.	3	Miliary tubercles. Small cavity at apex of each lung and lower lobe of left lung	„	„	„

TUBERCULOUS BRONCHO-PNEUMONIA (2 cases).

1	F.	$\frac{10}{12}$	Caseating areas scattered throughout each lung uniformly	Affected	Normal	Normal.
2	M.	1 $\frac{1}{2}$	Broncho-pneumonia, ? tuberculous	„	Affected	„

OTHER CONDITIONS (4 cases).

1	M.	8	Calcareous nodule apex of right lung. Old pleuritic adhesions, right apex	Normal	Normal	Tuberculous cerebral tumour.
2	F.	6	Fibrosis of lungs. Upper lobes many small caseating foci. Brown induration lower lobes	„	„	Dilatation of right side of heart.
3	M.	2 $\frac{1}{2}$	Caseating nodule size of large pea, apex of left lung	Affected	„	Tuberculous abscess of neck.
4	M.	1 $\frac{10}{12}$	A few caseating foci in lower lobe of right lung	„	„	Inquest. Perforation of supra-orbital plate by knitting needle, septic meningitis.

* Five of the cases with generalised tuberculosis suffered also from tuberculous meningitis, so that there were eight cases in which the meninges were affected.

In a letter to the 'British Medical Journal'* I stated that there were only 19 cases of tuberculosis of the lungs in my series of 244 post-mortem examinations, but upon going through them carefully again three others were discovered in which the lungs were affected; these have been placed last in the above table.

The condition of the lungs in the cases of generalised tuberculosis was of recent origin in every instance, and does not seem to have been the starting-point for the dissemination of the tubercles. The disease in the bronchial glands was of much longer standing in many of the cases, and it is very probable that the generalised tuberculosis originated from them. The only case in which a fairly large tuberculous cavity in the lungs was found was in a child, aged 6 months, so that considering the age of the patient the disease could only have been of short duration. In the two cases of broncho-pneumonia the disease was again acute.

In the remaining seven cases, one child was aged $2\frac{1}{2}$ years and another 1 year and 10 months, so that the disease in the lungs can scarcely be described as chronic. In another child, aged 3 years, with tuberculous meningitis, although the meningeal condition may have been secondary to the disease in the lungs, yet the appearance of the lungs suggested a recent infection. There therefore remain four cases in which the pulmonary tuberculosis can be described as at all chronic. Of these four cases, only the first child, who died from tuberculous meningitis, and the one who suffered from a cerebral tumour of tuberculous origin, can have suffered from pulmonary tuberculosis for any length of time, and only these two appear to present the condition which corresponds to that found in phthisis when occurring in adults. The small caseating foci found in the girl, aged 6 years, with fibrosis of the lungs were of recent origin, and were due to a terminal infection in a fibrosis which was evidently not due to tuberculosis. It is a remarkable coincidence that in one child who died from septic meningitis, due to perforation of the right supra-orbital plate by a knitting needle, recent caseating foci were found in the lower lobe of the left lung; but it must be remembered that this was one only out of 244 cases. In none of the others, except one of those suffering from broncho-pneumonia, was tuberculosis found only in the lungs and bronchial glands.

In 244 cases of children dying under the age of 15 years, there were found, therefore, at the post-mortem examinations only two cases in which the condition could be described as phthisis of the

* 'Brit. Med. Journ.,' vol. i, 1909, p. 568.

adult type, and in all the other 20 cases of tuberculosis of the lungs the disease was either due to an acute affection or one of a comparatively short duration.

It is only fair to add, however, that patients suffering from phthisis are not usually admitted into the General Hospital, Birmingham, except for some urgent reason; but when we consider how very frequently phthisis and evidence of past tuberculosis of the lungs are found in the post-mortem examinations of adults, and that it was only in two cases out of 244 children under 15 years of age that a condition at all comparable with the chronic phthisis of adults was discovered, we must conclude that phthisis is a rare disease during childhood. We must conclude also from the results of the above post-mortem examinations that pulmonary tuberculosis in children presents itself either as part of an acute disseminated tuberculosis, in which the lung condition is also acute, or as a broncho-pneumonia of short duration which is tuberculous from the beginning. I have therefore formed the opinion that the latent and chronic form of phthisis as found in the adult is a rare disease in children, and my opinion is based upon my own experience from post-mortem examinations and from clinical observations on even more cases than those analysed in this paper. At one time I used to consider that many children suffered from phthisis whom I proved subsequently to my own satisfaction did not. Some of the examiners of school children seem to be now going through this stage of over-estimating the prevalence of phthisis among children, and I am convinced that when they examine again these children later on they will come to the conclusion that their first diagnosis was not a correct one.

The Royal Society of Medicine.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

Friday, March the 26th, 1909, at 5 p.m.

Dr. CAUTLEY in the Chair.

Notes of a Peculiar Form of (?) Word-deafness successfully treated by the Oral Method were read by Mr. MACLEOD YEARSLEY. D. B—, aged 11 years, seen at a deaf centre on December the 21st, 1908. She had been at the deaf school for three years, and her condition on admission was as follows: "Has two brothers and three sisters normal.

Has only vowel hearing, and can produce no words ; apart from hearing and speech she is normal and more intelligent in work than a deaf child of her age." She was examined in February, 1908, by Dr. Ernest Jones, who noted as follows: "Frightened and nervous. Relies apparently on lip-reading, but hears whisper at five feet, obeying 'pick up your glove' uttered behind her back ; is, however, very uncertain and doubtful about all commands. Spontaneous speech slipshod and indistinct, but reproduced speech quite clear. Using test words and comparing results with lip-reading to those when only hearing is allowed there was always a tendency to replace 'sh' by 's' much more marked with lip-reading ; d and g and n and l are often mistaken too."

In November, 1908, she was examined by Dr. Thomas, who reported on the striking difference between heard speech (which is merely repeated by echolalia) and seen speech (lip-reading), which is immediately answered rationally. The following instances will show this difference :

Q. What is the time ? (by ear only).

A. What is the time ? (numbled without intelligence).

Q. What is the time ? (lip-read).

A. Immediately looking at the clock—Three o'clock.

Q. What is your father doing ? (lip-read).

A. Gone to work.

Q. What is your mother doing ? (by ear only).

A. Echolalic words.

The word-deafness apparently prevented the higher centre being effective, and the child could only repeat words heard without comprehending their meaning, but she had now learned to understand by lip-reading. On further examination many interesting points came out, thus :

(Aural) Q. What is the number of *your* house ? (by ear).

A. What is the number of *my* house (but no attempt to reply to the question).

Q. How many brothers and sisters have *you* ? (by ear).

A. How many brothers and sisters have *I* ? (but no attempt at answering the question).

(Visual) Q. What is your sister's name ?

A. Bertha.

The alteration in the pronoun marks an advance on mere echolalia. This substitution of the correct pronoun is especially taught in deaf schools. On further examination it was found that after she had repeated (echolalia) a question, if interrogated by lip-reading without the question being put again she could answer it, thus :

(Aural) Q. What is the number of *your* house ?

A. What is the number of *my* house ?

(Visual) Q. Well ! tell me.

A. Forty.

Again :

(Aural) Q. How far away do *you* live ?

A. How far away do *I* live ?

Teacher (by eye).—Q. Well ! tell him.

A. Not very far away.

The child was evidently using some subconscious action. The motor centre being roused by echolalia, by directing attention to this the meaning of the phrase was perceived. Telling the child not to repeat the question, but to think of it and answer, the following resulted :

(By ear) Q. What is your brother's name?

A. What is my brother's name? Willie.

Q. When is your birthday, Dorothy?

A. When is my birthday, Dorothy? December the 30th.

Q. When did you say your birthday was?

A. When did you say your birthday was? December the 30th.

Q. Do you like cake?

A. Do I like cake? Yes.

The child was now given to understand that she was on no account to repeat the question, but to think carefully of what she heard. She found great difficulty in doing this, but after pondering some time a correct answer was obtained without the echolalic motor response being evoked aloud. It was evident that considerable restraint had to be exercised to prevent this, and every now and again, in spite of instructions, the echolalia recurs to words heard, but never to words seen.

She was next examined by me on December the 21st, 1908, when I first saw her and carefully tested her hearing. The meatus both contained large plugs of cerumen, which I removed. Both tympanic membranes were normal in texture, with good light reflexes, and of normal mobility. The tonsils were very slightly enlarged, the nasal chambers and post-nasal spaces normal.

Functional tests: Acoumeter, right 4 ft., left 3 ft.; ordinary voice, right 27 ft., left 27 ft.; whisper, both 2 ft.; Rinné, both negative to C and C₂; bone-conduction to C fork, both normal; Edelmann Galtonpfeife, both ears detected a whistle of 50,000 D.V. By air-conduction she could not hear 3C16 and 2C32 with either ear; perception to all other forks, from 1C64 to C₂2048, was diminished on both sides, C128 being diminished over - 35 secs.

I found that she could answer questions in ordinary speech with her back turned towards me, but that when I tested her with the whisper she repeated my questions by echolalia, showing that the auditory centre is still not under complete control. Her school work shows a few deaf-mute characters, although it has greatly improved in this respect during the past year.

In this girl's case no language was acquired until lip-reading was established, and it is evident that the quickest and most direct route to her consciousness is by the visual centre. Questions heard are repeated by echolalia, but now she corrects her pronouns subconsciously. If special attention is directed to the motor response to questions heard consciousness can be attained and a correct answer given. With great effort heard phrases are understood without motor response being interposed, but not easily; often with error and often forcing the motor response in spite of attempted inhibition. It seems difficult to explain this case on any hypothesis save that of weakness of the auditory centre.

A Specimen of a Primary Round-celled Sarcoma of the Supra-renal was shown by Dr. H. C. MANN. It was removed from a child, aged 2 years. It had invaded the pericardium and the left lung. There were secondary growths of the parietal pleura, the cervical glands were sarcomatous, and there were deposits in both orbital plates of the frontal bone, in the right parietal bone, and the sternum. During life there was anaemia, and a splenic tumour and enlarged cervical glands. Later a large tumour was palpable in the abdomen; this tumour moved well with respiration, and was apparently splenic. It was subsequently found at the autopsy that the spleen, which was somewhat larger than normal, lay on the anterior surface

of the tumour. The spleen was not invaded, and the corresponding kidney was free from growth. The leucocyte count was 15,000 per c.mm.

The Brain from a Case of Cerebral Diplegic Spasticity, which had been shown to the Section on February the 20th, 1909, was exhibited by Dr. EDMUND CAUTLEY. The whole of the frontal and parietal regions was converted into a bilateral cystic form, bounded mesially by a wall containing a moderate amount of brain substance. According to the history, the child had been healthy till the age of seven weeks, and then had an illness which could be accounted for as encephalitis or meningitis. The post-mortem appearance made it more probable that the condition was congenital, dependent on developmental error in the prosencephalon.

Dr. LANGMEAD said that there was a specimen in the Museum of Great Ormond Street Hospital which closely resembled this case. It showed some narrowing of the small cerebral vessels.

Dr. GEORGE CARPENTER said he had not seen anything quite like the specimen. In the last 'Reports of the Society for the Study of Disease in Children,' vol. viii, 1907-08, pp. 165-170, however, he gave under the heading of congenital syphilis in the special discussion on that subject notes of a case which had sclerosis of its hemispheres in the motor area on both sides and elsewhere. It happened many years ago, and it was difficult to recall on the spur of the moment the exact post-mortem appearances. On removing the skull-cap he found a multilocular cystic condition very similar, but not nearly to that extent. On opening the cyst the underlying convolutions were found to be atrophied, but they had not completely disappeared like the case exhibited. Microscopically there was found to be sclerosis of certain convolutions, and he handed his microscopical specimens to Dr. Ernest Jones, with the request that he would make an independent report upon them. Dr. Jones's opinion was that it was syphilitic, which coincided with his own views. During life the child was spastic and had extreme head retraction. It was an infant, aged about 5 months, and had atrophic patches with choroid, which latter he regarded as due to syphilis.

A Specimen of Congenital Heart Disease was also shown by Dr. EDMUND CAUTLEY, showing transposition of the aortic and pulmonary artery. The right ventricle was the larger and gave off a normal aorta, from which the great vessels arose by a common origin. The left ventricle gave off the pulmonary artery, which was stenosed on account of two of its valves being adherent. There was a small opening in the interventricular septum and the foramen ovale was patent. The ductus arteriosus was normal. The child lived till eleven months old, showing moderate cyanosis and clubbing. The heart was enlarged to the right of the sternum. There was a systolic pulmonary murmur, and a systolic murmur heard at the apex and behind.

A Female Child, aged 7 years, with Congenital Heart Disease was shown by Dr. JEX-BLAKE. She had a good colour and weighed twenty-eight pounds. Over the pulmonary area a continuous murmur could be heard, loudest during systole. It could also be heard over the whole chest, back and front.

Dr. WHIPHAM thought there were one or two small glands to be felt in the neck. If the murmur was not due to glands he would agree that it was caused by a patent ductus arteriosus.

Dr. G. LE B. TURTLE asked whether the murmur varied in intensity from time to time. That was so when it was due to enlarged glands.

The CHAIRMAN thought that it was a purely systolic murmur, and was inclined to ascribe it to some pulmonary stenosis and patency of the inter-ventricular septum than some other defect, because there was so much hypertrophy. The child had not grown well, which he thought meant a bad prognosis.

Dr. JEX-BLAKE replied that the murmur had not been noticed to grow louder or softer at different times.

A Case of Congenital Malformation of the Heart, showing a patent ductus arteriosus with bicuspid aortic valves, was shown by Dr. GEORGE CARPENTER. The child died at the age of three months. During life there



was a systolic murmur, best heard over the third left space just inside the nipple line conducted towards the left clavicle. The left side of the heart was the larger. The right ventricle was dwarfed. The foramen ovale was closed.

A Pathological Report upon the Specimen of Congenital Cystic Disease of the Kidneys showed at the Section on January the 22nd, 1909, was given by Dr. WHIPHAM. The sections showed small cysts with a great increase of connective tissue. The tubules were mostly dilated but many were contracted. Glomeruli were somewhat contracted, but Bowman's capsules were dilated. The arteries were thickened. The pancreas showed some fibrosis and thickening of its vessels. The bile-ducts of the liver were dilated and convoluted. The spleen showed an excess of connective tissue.

Dr. PARKES WEBER thought that the spaces in the portal fissures might be blind spaces and not dilated bile-vessels. In that case the liver was an example of cystic liver.

Transparencies and Photographs of a Case of Bulbous Purpura following Impetigo in a boy, aged 4 years, were also shown by Dr. T. R. WHIPHAM. There was no history of hæmophilia or of syphilis in the patient or his family. The fluid from the bullæ contained degenerated blood-corpuscles, but no growth of organisms could be obtained by cultivation. From the impetigo lesions a mixed growth of *Staphylococcus albus* and *citreus* and streptococcus was obtained. The patient was given boracic baths, and the bullæ either were punctured or burst spontaneously, leaving deep sloughing ulcers. Under treatment with hydrogen peroxide, chinosol baths and balsam of Peru dressings the ulcers cleaned and the condition was now cured.

A Case of Transposition of the Viscera in a girl, aged 8 years, was also shown by Dr. WHIPHAM. There was a mitral systolic murmur at the heart's apex. The child had had chorea twice.

The CHAIRMAN thought that such cases were not so uncommon as one was led to believe in books. He believed that prognosis of life was just as good as if the heart were not transposed.

Dr. F. J. POYNTON and Dr. LANGMEAD thought that if the heart was on the right side of the body there was greater liability to endocarditis.

Dr. PARKES WEBER asked whether proposers for life assurance should be rated if the viscera were transposed?

Dr. WHIPHAM thought not.

A Case of Ankylosis of both Hip-Joints ascribed to Scarlet Fever, and a Case of Syphilitic Osteo-periostitis were shown by Mr. O. L. ADDISON.

The CHAIRMAN asked what treatment had been adopted, and Dr. E. I. SPRIGGS asked whether the tissues or fluids had been examined for the spirochæte.

Mr. ADDISON replied that after operation the general conditions had improved under mercury and iodide. There was still a sinus over the tibia. The spirochæte had not been looked for.

A Case of Congenital Symmetrical Swellings on both Heels in a girl was shown by Dr. F. J. POYNTON. His view was that they were lipomata.

A Microscopical Specimen of the Liver from a Case of Icterus Neonatorum in a child, aged 19 days, was shown by Dr. GEORGE CARPENTER. She became jaundiced on the second day. The navel was healthy; the stools were green; there was a systolic murmur over the left pulmonary area and in the left axilla. Post-mortem the liver was not enlarged, but its section was a deep mahogany colour, in which no liver lobules could be seen. As far as the bile-ducts could be traced they were empty and not obstructed. Microscopically the liver-cells were crammed with bile-granules of an olive-green colour. The bile lacunæ were filled with inspissated bile, and the fine bile-capillaries, the channels produced by those bile-cells in actual contact, were in some parts filled with the same material. Many of the small bile-tubes in the portal canals contained bile-casts in their interiors, mostly olive-green in colour, but sometimes yellowish. Dr. Carpenter also briefly related the histories of three other cases of brothers and sisters, one of which he had seen in consultation with Dr. Finch Haines.

All of the infants had a plentiful supply of bile in their motions; they were well nourished, but deeply jaundiced, and died a few days after birth. He said he took the opportunity of recording these cases as stepping-stones to the study of *icterus neonatorum*, and with the hope that the communication would stimulate the members of the Section to research in this department of medicine, which, judging by the records in the 'Reports of the Society for the Study of Disease in Children,' had excited very little interest.

Dr. E. I. SPRIGGS said it was not necessary for there to be gross blockage for the production of obstructive jaundice, not only in the condition of toluylendiamin poisoning, but in acute yellow atrophy and phosphorus poisoning. It was probable that the jaundice occurred because of the catarrh of the small bile-ducts. That might also account for liver-cells containing particles of pigment.

Dr. POYNTON referred to two cases which he brought before the Section two years ago, in which the children got well. He thought that in cases of prolonged jaundice it was a mistake to vaccinate the child. He did not think that such cases were common.

Dr. PARKES WEBER referred to cases in which several children of the same parents had had jaundice, some of them having died.

A Paper upon Three Cases of Henoch's Purpura was read by Dr. PORTER PARKINSON. Case 1 was a boy, aged 8 years, who suffered from pain in the legs and abdomen, and a purpuric rash over most of the body and limbs. The spleen could be felt. The urine contained albumin and occasionally a trace of blood and casts. The abdomen was tender in the epigastric and right iliac regions, and there was occasional vomiting. The child was treated with two injections of horse-serum without any improvement, but recovered and was discharged with the urine still albuminous. Case 2 was a boy, aged 6 years, suffering from abdominal pain and vomiting. There were purpuric spots all over the extensor aspects of the limbs. The abdomen was not tender. The urine contained albumin and occasionally blood. In hospital he was suddenly attacked with abdominal pain, and the abdomen was tender in the left lumbar region. The pain continued on and off for nearly two months, occurring in crises every two days. Blood was found in the stools during most of this time. Later the face became puffy, especially the lips and eyelids, but the child began to slowly improve. The treatment was at first calcium chloride, and later three injections of horse-serum. Two fresh groups of purpuric spots appeared while the child was taking calcium. The third case, under the care of Dr. Charles Bolton, was a boy, aged 6 years, who came into hospital with severe pain and passing blood in the stools, with a measly non-purpuric rash and coryza. The next day he vomited and passed blood and mucus by the rectum. The abdomen becoming distended, it was thought that intussusception might be present, and the abdomen was opened, but none found. There were flecks of lymph in the peritoneum with some evidence of general peritonitis. He died next day. At the necropsy there was general peritonitis, and on the small intestine were about thirteen hæmorrhagic extravasations about the size of peas and projecting on both outer and inner surfaces of the intestine. About a foot from the iliac valve there was a collection of much larger hæmorrhage. The small intestine was distended with gas, and the large intestine as far as the splenic fissure, where for about six inches it was quite dark from diffuse hæmorrhage, thickened, and looked almost gangrenous. The diagnosis lay between measles and Henoch's purpura, the suspicion of

intussusception not being verified. Dr. Parkinson thought it was a case of purpura, but the absence of blood and albumin in the urine was unusual. The case supported a suggestion of Mr. Hugh Lett made in the 'Reports of the Society for the Study of Disease in Children,' that it is advisable not to operate for intussusception in a case of Henoch's purpura unless an abdominal tumour could be felt.

Mr. HUGH LETT said the presence or absence of intussusception in Henoch's purpura was very important. He had reported a case in which intussusception had developed during the illness and was reduced by operation. Seventeen days later another intussusception occurred, and the child died. He thought that the crucial feature to be relied upon was the presence of a sausage-shaped tumour, and that there should be no operation where a tumour was not felt. He had operated upon twenty-eight cases of intussusception, in all of which he felt a tumour either from the abdomen or *per rectum*. In two or three of them he could not feel it without an anæsthetic. Surgical operation in Henoch's purpura was a very serious matter, and in some cases the patient had died of hæmorrhage from the wound. If he saw another case of undoubted intussusception with purpura he would be inclined to try injection before operation.

Dr. LANGMEAD said that a tumour might be present simulating intussusception, but due to extravasation of blood; and Dr. E. I. SPRIGGS referred to another case showing this condition.

The CHAIRMAN thought the term "Henoch's purpura" should be dropped, as the disease was simply purpura hæmorrhagica with abdominal symptoms.

A Case of Hyperplastic Tuberculosis of the Rectum in a boy, aged 10 years, was shown by Mr. LOCKHART MUMMERY. There was no pain or straining, but the bowels were loose, being opened as many as twenty times a day. There was no vomiting or wasting, and the appetite was good. Large masses could be felt projecting in the rectum from all sides, irregular in surface and shape. With the sigmoidoscope several ulcers about a third of an inch in diameter were seen, and had the appearance of tuberculous ulcerations. The whole of the mucosa of the rectum was red and swollen. The ulceration quickly cleared up as the result of daily irrigation with weak antiseptics.

A Case of Scurvy in a boy, aged 1 year and 4 months, was shown by Dr. GEORGE CARPENTER. He had been reared on coarse milk and barley-water for the first three months, and afterwards he had been given bread and milk, etc. He was admitted to hospital with a history of two falls, and was found to have a bruise over the right eye and a hæmatoma of the scalp and a clavicle fracture. After twelve days he was discharged as cured and continued in good health for six weeks, when he was readmitted with a swelling in the left arm without any history of injury. The swelling extended from the shoulder on to the forearm. There were also marks of old hæmorrhages on the backs of both feet. A skiagram showed a partial separation of the lower epiphysis of the humerus. He had improved very much on a suitable diet. No special treatment in regard to the separation of the epiphysis, and the child quickly recovered and left the hospital quite well and with a freely movable elbow-joint. The separated parts had been moulded together again by callus, and the bones of the arm and forearm when extended were in the same straight line. Dr. Carpenter said the case could be viewed according to fancy either as one of primary separation

of the epiphysis or as one of scurvy with epiphysial separation. He was inclined to the opinion that our views with regard to scurvy might with advantage be extended, and that cases of scurvy in infants are not infrequently admitted into surgical beds and with various hæmorrhages out of all proportion to the trauma, and which are more readily explained by a



scorbutic condition of body than by the nature of the injury, and, moreover, which readily recovered under the usual hospital dietary. May the 18th.—The child has been re-admitted into hospital once more with large bruises on his right cheek which cannot be accounted for.

A Case of Congenital Hypertrophic Stenosis of the Pylorus in a male infant, aged 5 weeks, was shown by Dr. GEORGE CARPENTER. The child died the day following its admission. The stomach was sausage-shaped and the wall thickened generally. The pylorus was seven eighths of an inch long and a quarter of an inch thick; its channel admitted a No. 4 catheter.

An Infant with Multiple Congenital Malformations was also shown by Dr. GEORGE CARPENTER.

Provincial Societies.

ABERDEEN MEDICO-CHIRURGICAL SOCIETY.

April the 1st, 1909.

Notes of a Case of Congenital Pyloric Stenosis were read by Dr. DALGARNS. The child, a male, was born on April the 12th, 1908. It was healthy and weighed $7\frac{1}{2}$ lb. For the first three weeks nothing was noticed save that the child cried a good deal. Vomiting without apparent cause then began—seemingly more a regurgitation of food than of vomiting from sickness. The child was being fed on milk and barley-water. Various changes of diet were tried, each being followed by improvement for a day or two, to be succeeded by a return to the old symptoms. Small doses of calomel constituted the medicinal treatment. Gradually other symptoms presented themselves—obstinate constipation and peristaltic waves from left to right. On June the 7th, as the methods of relief were quite ineffectual, Mr. Marnoch performed a pyloroplasty, the child being then two months old and weighing $6\frac{1}{4}$ lb. The infant made a good recovery. Now at eleven and a half months he weighs 22 lb. 2 oz.

Mr. J. MARNOCHE said that he elected to do a pyloroplasty, since he held that the objections to divulsion in the adult, viz. tearing of the peritoneal coat with leakage and inefficient relief or recurrence, were equally cogent in the case of children. As between pyloroplasty and gastro-jejunostomy the former was considered to have the advantage of speed and less exposure of the abdominal contents—important points in carrying an abdominal operation in an infant to a successful issue. Difficulties were, however, met in the operation, and in reality gastro-enterostomy would have been easier. The child did well. Vomiting persisted for a week after operation and then gradually subsided. As regards the ætiology of the trouble, Mr. Marnoch held that the weight of the evidence was in favour of the congenital origin of the disease. The delay in the onset of symptoms might be explained by the theory that the hypertrophy having begun *in utero* does not reach its full extent until some time after birth. He regarded the malady as a rare one. As regards treatment he thought mild cases might do well under medical treatment, but severe ones required surgery.

Mr. J. SCOTT RIDDELL did not think gastro-enterostomy the easier operation. In the single case in which he had operated he found pyloroplasty very simple. Bunts had come to the same conclusion regarding pyloroplasty as the operation of choice. The mortality is about 55 per cent. The physician is apt to delay too long before transferring the case to the surgeon.

Dr. MACKERRON considered that the question of treatment was now in a transitional stage. Previously the tendency was to believe that the only hope lay in surgery, but now in view of the many successful cases recorded that had been subjected to only medical treatment, the view was becoming more prevalent that the disease should in most cases be left in the physician's hands.

Dr. DAVIDSON had seen twenty-one cases at Great Ormond Street Hospital. He detailed the treatment adopted then, laying stress on lavage and careful feeding as the most important factors. The child must not be handled for an hour at least after feeding. Cessation of vomiting and increase in weight

are the signs of improvement, but this is often preceded by an initial fall in weight. The continuance of the peristaltic waves is not an ominous sign. Progress is always slow and many months are needed for cure.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.

Cases shown at March and April Meetings.

Juvenile General Paralysis, by Dr. E. F. TREVELYAN. A boy, aged 14 years. There was progressive mental deterioration and screaming attacks. The pupils, unequal and with irregular margins, reacted sluggishly to light. There was commencing optic atrophy. The right knee-jerk could not be obtained. There was presumptive evidence of congenital syphilis.

Epispadias, with Incontinence of Urine; Cysto-proctostomy, by Mr. J. F. DOBSON and Mr. J. STEWART. The patient, a boy, aged 7 years, was admitted into the Batley Hospital in May, 1908. There was complete incontinence of urine from birth, and the urethra opened on the dorsum of the penis at its root; a large catheter could be readily passed into the bladder. The urethra was exposed through a perineal incision, and divided transversely at its junction with the bladder; the bladder was then united to the rectum just above the sphincter by a Murphy button. Union occurred with the formation of a fistula, which was closed by cauterisation at the third attempt. The boy now has control for two or three hours, and has improved very much in appearance and in health.

Two Cases of Acute Intestinal Obstruction in Children, by Mr. J. F. DOBSON. E. C—, aged 5 years. Strangulation of small intestine by an omental band adherent to a caseating gland of the ileo-colic group. Intubation of the intestine, enteroplasty, enucleation of the gland.

F. F—, aged 7 years. Strangulation of the small intestine by a Meckel's diverticulum, with perforation of the intestine at the point of strangulation. Intubation and enterectomy.

Rupture of the Receptaculum Chyli, by Mr. J. F. DOBSON. Patient, a child, admitted shortly after being run over by a hansom, the wheel of which passed over the chest. Some ribs were fractured on the right side. The child was very collapsed, the abdomen rigid and tender, and dull to percussion in the right loin. On opening the abdomen, which contained a small quantity of blood, a swelling was found to the outer side of the ascending colon, behind the peritoneum. On incising the peritoneum over the swelling a considerable quantity of thin milky fluid escaped; the colon and duodenum were stripped forwards, and the fluid was seen to be coming from above the inferior vena cava. A drain was placed in the cavity, from which a considerable amount of fluid escaped in the first few days following the operation.

Acute Bronchiolectasis after Measles, by Dr. MAXWELL TELLING. Arthur M—, aged 3½ years; measles, with broncho-pneumonia seven months ago; since then much cough, causing vomiting. Was anæmic and

cachectic; the finger ends were definitely clubbed. On admission there was marked dulness at the left base, with some flattening of the chest, diminished entry of air and slightly increased vocal resonance. Throughout the lungs, but especially at the bases, there were many adventitious sounds, principally coarse crepitations. Under treatment there has been moderate improvement, the adventitious sounds lessening, though the dulness persists; cough is less; clubbing of the fingers is disappearing and the child is gaining weight.

Slight Chronic Jaundice in a Child; Enlarged Liver and Spleen, by Dr. MAXWELL TELLING. IVY R—, aged 8 years. Jaundice, varying in intensity, for over two years (following scarlet fever). General health fair, but languid. The liver is enlarged three fingers-breadths below the costal margin, and is unduly firm. The spleen reaches the level of the umbilicus. Bowels rather loose; occasional epistaxis. No other case in the family.

Delayed Resolution in an Apical Pneumonia, by Dr. MAXWELL TELLING. LILLA T—, aged 14 years. On February the 1st subacute onset (about two days) of marked consolidation at right apex. From aspect of child, localisation of lesion, and persistence of temperature, the case, on admission (March the 8th), was regarded as acute pneumonic phthisis. Subsequently there was steady improvement, though signs of consolidation, without any adventitious sounds or expectoration, still persist. Temperature (mainly remittent), at first 105° F., reached normal in two and a half months. No sputum. Calmette reaction negative.

Aortic Stenosis, with Mitral Stenosis, by Dr. MAXWELL TELLING. Ethel F—, aged 17 years. Systolic bruit and thrill at base, with small pulse. There is also a very short diastolic murmur at second right costal cartilage. Pre-systolic murmur and thrill at apex. When eleven years old she had growing pains and sore throats; facies typical delicacy of rheumatism. This case was shown four years ago, when she first came under observation, and the physical signs are quite unchanged from what was then observed. The general health has been very fair during this period.

Double Dislocation of Patellæ, by Mr. W. THOMPSON. Albert P—, aged 12 years. The condition has existed as long as he can remember. His only complaint is that he walks in an ungainly fashion.

Monoplegia of Right Arm following Traumatic Asphyxia, by Mr. W. THOMPSON. Male, aged 15 years. Kicked in back and sent spinning forward; remembers nothing more. On evening of day of admission it was noticed that the right arm was not moved. Suffering from concussion. Face and neck blue and with petechial and sub-conjunctival hæmorrhages. He could not move arm from shoulder downwards, except for some flexion of wrist and fingers. Diminished cutaneous sensibility of arm from shoulders. Sensation has improved. Muscles of shoulder girdle paralysed, except trapezius. Deltoid, supra-, and infra-spinatus and biceps show no reaction to faradism. Extensors of arm and forearm reaction diminished. No triceps or supinator reflex obtained.

Adhesive Mediastinitis, with Dilatation and Hypertrophy of the Heart, by Dr. WARDROP GRIFFITH. Male, aged 9 years. Pneumonia and

empyema when four, followed by scarlatina, good recovery. Shortness of breath for a year, with pain in epigastrium. Swelling of abdomen since Christmas. There is considerable enlargement of the heart but no bruits, and marked enlargement of liver with ascites. Abdominal fluid, transudative and non-inflammatory. *Treatment*: Paracentesis three times; digitalis.

General Muscular Dystrophy, by Dr. T. CHURTON. Male, aged 7 years, admitted March the 29th, 1909. Six months ago he had a "bad cold" (? influenza) and was in bed a month; then found to be unable to stand. March the 6th: could not feed himself; hands weak and "aching." He could not raise head from pillow (recti abdominis feeble), nor trunk from bed. Can now stand and walk, but feebly. Sensation and sphincters normal. He has never been strong. He had an attack said to have been "exactly like this" fourteen months ago, lasting three months.

MIDLAND MEDICAL SOCIETY.

March the 24th, 1909.

A Case of Chronic Joint Disease in a child, aged 14 years, was shown by Dr. DOUGLAS STANLEY. The patient was very small for her age and showed a marked degree of infantilism. The chief joints affected were those of the fingers, wrist, feet, elbows, and knees. The changes in the joints were similar to those occurring in the osteo-arthritis of adults, and had followed after a chronic vascular disorder of the hands and feet which seemed to correspond very closely with Raynaud's disease. There was no enlargement of the lymphatic glands and spleen.

Mr. LEONARD GAMGEE said that the appearance of the joints suggested that the condition was due to trophic lesions and not to any microbic infection.

Dr. SAWYER said that osteo-arthritis similar to that occurring in adults was the rarest of all the chronic progressive joint diseases of children, and pointed out how the condition differed from that described by Still. He said that a case of chronic syphilitic synovitis had been described recently by Mr. Boyd Barrett, but in that case there did not seem to be much evidence of the condition being due to syphilis. He asked whether Dr. Stanley had found any history or symptoms of congenital syphilis in his case.

Dr. DOUGLAS STANLEY, in reply, said that there was no evidence of syphilis, and that he considered the disease was due to trophic changes. The association of Raynaud's disease with osteo-arthritis was very significant of this.

Philadelphia Pediatric Society.

MARCH the 9th, 1909, J. CLAXTON GITTINGS, M.D., President.

Splenic Enlargement.—Dr. H. H. JENKS showed a white child, aged 5 years, with history of cough and dyspnoea for three months. Child is well nourished, small for her age; skin lemon yellow; mucous membranes pale; respiration rapid and laboured, 44 to 50; absolute flatness and faint bronchial breathing over entire left lung except a small strip one inch in width along the left side of the spine; liver palpable 3.5 cm. below costal border in right nipple line; spleen very large, extending 11.5 cm. below costal edge in left nipple line, with notch easily felt; temperature 100° F. or less; urine shows albumin, trace, and few red blood cells. Blood count follows: R.B.C. 2,718,000; leucocytes 7000; H.B. 55 per cent.; lymphocytes 22.6 per cent.; large mononuclear 13 per cent.; transitional 8.4 per cent.; polymorphonuclear 49.6 per cent.; eosinophiles 6.4 per cent. (500 cells). No malarial organisms; no tubercle bacilli in sputum; no parasites in stools. The exact diagnosis was not decided.

Dr. F. B. JACOBS believed that this child had previously had rickets. He hardly thinks there is fluid in the child's lung, yet percussion gives one that impression. But the dulness is not changeable. While the diagnosis remains in doubt, the tumour palpable on the left side of the abdomen is certainly the spleen.

Dr. J. H. SWAN said that he had been interested in the study of the blood of the patient just shown, which he was able to make through the kindness of Dr. JACOBS. There was quite a range of possibilities from which to select a name for the condition found. The blood picture might be found in malarial cachexia, in splenic anæmia, in tuberculosis of the spleen, or in malignant disease of the spleen. Splenic anæmia, or its later stage, Banti's disease, was probably the proper name to give the condition.

Dr. JENKS added that there was albumin in the urine, and blood in the sputum, urine and fæces.

The Subcutaneous Injection of Sea Water.—Dr. THEODORE LE BOUTILLIER read a paper on this subject, exhibiting eight children under treatment by this method, for various diseases.

In answer to Dr. HAND's question, Dr. LE BOUTILLIER said that no tubercle bacilli had been found in the child with supposed tuberculosis.

Dr. M. B. HARTZELL said that this report would have been more convincing had mercury not been used in addition to the sea-water treatment. He admitted that he could not think of taking the subject seriously.

Dr. GITTINGS noted that the specific cases had also been given mercury, and wondered whether all the cases had had other treatment also. The value of such a treatment can only be finally determined by such experience on the part of many observers.

Dr. A. H. DAVISSON asked whether Dr. le Boutillier thought these children got water by these injections that they would ordinarily obtain by drinking, did they not neglect to do this.

Dr. S. McC. HAMILL asked what changes were made in the hygiene and diet of these cases at the time treatment was begun. The improved physical conditions which were evident in some of these cases were frequently

brought about by a general hygienic regulation. It is important, in determining the value of any treatment, to eliminate all possible outside influences which might have worked towards the accomplishment of successful results.

Dr. LE BOUTILLIER said that the tubercular case had been under good treatment before the sea-water injections were begun, but she had only gained weight afterward. The cases of malnutrition had been breast-fed before treatment and since also. The diet and hygiene are important and every mother is instructed in these points, whether sea-water treatment is given or not. These cases had failed to improve until the injections of sea water were given. In the syphilitic cases mercury had been given since birth, long before sea water was used; but the improvement only started after the sea-water injections.

Angioneurotic Œdema.—Dr. S. SEILIKOVITCH reported a case in an infant, aged 3 weeks, with swelling of the labia majora lasting two days; then the right side of the face swelled for one day, followed by a circumscribed swelling on both arms, remaining three days. For the next two days the child was free from swelling; then the left labium major again swelled, this time to five times its normal size, became purple and indurated. The child was apparently quite well otherwise. Three days later it refused to nurse, vomited several times, and a soft circumscribed swelling appeared on the calf of the left leg. The next day the child became cyanosed and died in a convulsion.

Dr. HARTZELL said that angioneurotic œdema was first described as a giant urticaria. It is commonly regarded as akin to urticaria, but while the latter is frequently due to articles of food or drugs, angioneurotic œdema never has been found due to any such cause. Besides, there are many cases in which no urticaria is ever found. Urticaria itches, while angioneurotic œdema is accompanied by no subjective symptoms. One of the common causes of angioneurotic œdema, beside heredity, is exposure to cold, such as going out of doors in winter, and in certain cases eating ice cream or drinking ice water will cause swelling of the tongue. The coal tar products may produce urticaria, but never angioneurotic œdema. The latter frequently occurs at night. The case reported is remarkable on account of the early age of the patient. Angioneurotic œdema may also attack the mucous membranes, even of the larynx and tongue. Diet has no effect in treatment. Sodium salicylate is of value internally, diminishing the number of attacks. Calcium chloride may be tried also, on theoretical grounds.

Dr. SILIKOVITCH added that quinine seems of value, especially when the swelling occurs periodically. He believes that the cause of death in his case was œdema of the larynx.

Infantile Paralysis.—Dr. S. H. CROSS reported a case, with complete and rapid recovery. The boy went to bed well on December the 15th, but woke during the night complaining of pain in the right knee, and in the morning it was found that he could not move his right leg. Examination showed no tenderness or stiffness; knee-jerk decreased on right side; complete paralysis of the exterior muscles of the thigh. At the end of a week he could stand alone and walk with some assistance. In spite of an attack of acute tonsillitis at this time, he continued to improve. On December the 30th the right thigh was a quarter of an inch less than the left in

circumference. By the middle of January he had perfect use of the leg and measurements were equal. On March the 8th both thighs measured twelve inches, an increase of one inch on each side, and all muscles react to the faradic current.

Dr. HERBERT FOX said that exposure to cold and some of the acute exanthemata are said to predispose and to cause this disease, but this is not borne out by a study of the epidemic form. The difference between the epidemic variety and the sporadic cases of this disease consists in the greater prominence of the symptoms and signs of acute infection, the quite regular course of the epidemic type, and the fact that the paralysis more often clears up rapidly in this form. The abortive or atypical cases are numerous, and are important from a hygienic standpoint, because they are most difficult to follow. The bacterium has been found in the spinal fluid of cases both in Norway and in this country, but the injection of cultures into experimental animals has not as yet produced poliomyelitis. In a number of cases the spleen has been enlarged during the preparalytic febrile period. In the vast majority of cases studied there have been evidences of increase of spinal fluid with some pressure, but no pronounced irritative meningeal symptoms.

Dr. GITTINGS thought that the cause of anterior poliomyelitis would eventually be shown by the bacteriologists.

Dr. CROSS, in answer to Dr. McKee's question, said that the case had not shown any irritative motor phenomena or tenderness over the nerve-trunks. No blood examination had been made.

The Surgical Aspects of Meckel's Diverticulum. — Dr. J. B. CARNETT reported a case of Meckel's diverticulum contained in an inguinal hernia in a boy, aged 12 years. Attacks of constipation and abdominal pain began when patient was two months old, and recurred at intervals over a period of four months, and were ascribed to a right inguinal hernia. After wearing a truss for one year, the hernia was considered cured. When twelve years old he was struck over the right inguinal canal by a baseball. A few days later he began to have attacks of colicky pain, tympanites, and constipation; later he discovered hernia of right inguinal canal. Severity of symptoms depended on the size of the hernia, which disappeared on lying down. The right testis was found incompletely descended, and disappeared into inguinal canal on reduction of hernia.

Operation was performed three months after he had noticed the hernia. A Meckel's diverticulum having a length of two and one half inches, and a diameter of the same size as the ileum, was found in the congenital sac. The tip of the diverticulum was adherent to the sac wall. Diverticulum excised and its stump inverted into the ileum. Radical cure of the hernia by Bassini's operation. Good recovery followed, with no return of symptoms. Pathological examination of excised specimen revealed catarrhal diverticulitis.

Meckel's diverticulum is found at autopsy in 2 per cent. of human beings. In the absence of complications it does not give rise to any symptoms. The more common lesions by which it manifests itself clinically, in the order of frequency, are intestinal obstruction, diverticulum open at the umbilicus, diverticulitis and hernia. The symptoms and treatment of these lesions were then discussed.

Dr. W. F. GUILFOYLE, by invitation, then demonstrated a number of specimens of Meckel's diverticulum.

Société de Pédiatrie, Paris.

January the 19th, 1909.

Dyspnœa following Nasal Installation of Menthol Oil.—A. DELILLE reported the case of an infant attacked with general bronchitis with acute naso-pharyngitis, for which installations of menthol oil, 1 per cent. were prescribed. The solution had just been introduced into the nose from a small spoon when the child was suddenly seized with spasm of the glottis. By means of mustard baths at 40° C. and rhythmic tractions on the tongue the spasm diminished, and at the end of a quarter of an hour respiration became normal. The author asked if the menthol were the cause of the trouble.

M. GUINON had observed several similar cases and had ceased to use menthol oil in infants; he preferred instead gomerol oil or camphor oil.

M. MARFAN, who had frequently used interlaryngeal injections of menthol oil in cases of diphtheria, had met with no such accidents. He was of opinion that the child's head should be placed low but not extended.

M. COMBY thought that a 1 per cent. solution was too strong, and used 1 in 300.

M. MARFAN further drew attention to the difference in irritating properties when menthol solutions were made with vaseline, vaseline oil and sterilised olive oil.

Congenital Retraction of the Flexors of the Fingers.—M. MOUCHET showed a child, who after a fall on the left arm without other apparent injury than a slight local ecchymosis was attacked some time afterwards with permanent flexion of the middle and ring fingers. It was impossible to extend the fingers. If, on the other hand the wrist was flexed, flexion of these fingers was performed normally. The electric contractility was normal.

Paralysis of Convergence following Scarlatina.—M. TERRIEN insisted on the rarity of this condition. Bilateral radial paralysis of peripheral origin had been known to follow scarlatina.

February the 16th, 1909.

Hypertrophy of Thymus and Compression of Trachea.—M. BARBIER showed the organs of a child of 18 months, admitted into hospital for gastro-intestinal trouble of long standing, ending in atrophy. This child was suddenly seized with difficulty of breathing with forward projection of the sternum and lateral depression of the sides; sudden death. At the autopsy an enormous thymus extended from the base of the heart along the anterior border of the lungs. A second case was that of an infant of 6 months, having the aspect of congenital syphilis, with intense inspiratory trouble; radiography confirmed the presence of an enlarged thymus. A third case was that of a child admitted for eczema in the head, who had intense inspiratory dyspnœa and died suddenly during the night. At the autopsy a voluminous thymus caused narrowing of the trachea. The

diagnosis of such cases was difficult even with the aid of radiography, but was important with a view to the possibility of surgical intervention.

MM. MÉRY and PARTURIER related an analogous case, in which neither intubation nor tracheotomy could alleviate.

M. MARFAN asked if there was compression of the trachea or of the recurrent nerves; in the latter case an intense dyspnoea with inspiratory stridor was produced, owing to paralysis of the dilators of the glottis, and was not benefitted either by intubation or by tracheotomy. He was opposed to the idea of sudden death from hypertrophy of the thymus in the case of the eczematous infant presented by M. Barbier; he had noticed sudden death in cases of untreated eczema in which the autopsy was entirely negative.

Examination of the Stools in connection with the Biliary Functions in Infants.—MM. TRIBOULET and HARVIER made an important communication on this subject. Insufficiency of this function is of first importance in the physiology of young infants, whether brought up at the breast or bottle-fed. To investigate biliary troubles in the living subject, a systematic examination of the faecal material was made by diluting with sterilised water and a few drops of sublimated acetic acid. A series of colour reactions of four kinds was noticed.

1st. Rose-pink reactions, corresponding to the presence of stercobilin, a normal modification of normal pigment.

2nd. Yellow reactions (stercobilinogen); dull yellow (pigmentary acholia).

3rd. Green reactions (unmodified biliverdin, which is normal in breast-fed infants up to the age of two to four months, but abnormal in bottle-fed infants).

4th. Grey or white reactions pigmentary acholia, a very grave abnormality.

It is necessary to examine in the tubes both the deposit and the supernatant liquid, since the former may present a different colour from the latter, which may even remain colourless.

These results, compared with clinical observations, give accurate information as to the normal or abnormal trophism of the patients apart from febrile ailments, and have a relative importance more or less absolute in the prognosis of infants who are febrile. In 10 apyretic infants with normal trophism the reaction was diffuse green in very young infants at the breast; rose-coloured (stercobilin) in infants at the breast or bottle fed).

In 50 atrophic subjects: in the first stage, still curable, the colour was dirty red in the deposit, the liquid almost colourless. In the second stage, feeble green in the deposit, liquid clean; prognosis grave. Third degree, grey-green to white deposit; prognosis fatal.

In 28 febrile subjects—tuberculosis excepted, from fifteen days to two years, affected with impetigo, broncho-pneumonia, erysipelas, pneumonia, measles, scarlatina, varicella, diphtheria, and indefinite diseases, the rose reaction (stercobilin) or yellowish rose (stercobilinogen) denotes normal pigmentation, and is rather a favourable sign. It has but a relative value, since a subject with normal biliary functions may succumb to other physiological disturbances (there were 5 deaths out of 15 cases with the stercobilin reaction). On the other hand, negative reactions (dull yellow or absence of colour) have an absolute value, there being 8 fatal cases in 8 observations, 2 pneumonia, 4 broncho-pneumonia, and 2 measles.

VINCENT DICKINSON.

Reports from Hospital Practice.

Impaired Accommodative Power in a Boy, associated with Loss of Pupillary Reflex to Light and Convergence.

(Under the care of Mr. MICHAEL TEALE in the Eye Department of the Leeds Public Dispensary.)

ROWLAND G—, aged 10 years, was brought to the Dispensary on February the 5th, 1908, owing to his parents having noticed that he was unable to read the letters of an ordinary book. Atropine drops were ordered, and his refraction was estimated a week later. His vision was then found to be with $+1.0$ dioptré $\frac{n}{1\frac{1}{2}}$ in each eye. A fortnight later he was tested with trial lenses, but as the effects of the atropine were thought not to have passed off he was sent away for another week. At the end of that time he still required $+1.0$ dioptré to see $\frac{n}{1\frac{1}{2}}$, and $+4.0$ dioptrés to read J. 1 at nine inches; he was therefore given eserine drops to use twice daily.

The boy did not again present himself until April, 1908, when the same condition was found of paresis of accommodation, dilation of pupil, with absence of reaction to light and convergence. In February last he returned to the department, and was still in the condition noted a year before. Since then he has been given glasses, to enable him to do some reading, tonics, and eserine drops, but there is no certain improvement to be noted.

The interest of the case lies in the paresis of the ciliary muscles, associated with the dilation of the pupils, which show an entire absence of reflex to light (either direct or consensual) and to convergence, the condition having persisted for at least a year and three months without known cause. So far as can be ascertained, there has been no diphtheritic infection, not even a suspicious sore throat being admitted by his mother. Apart from the unlikelihood, on other grounds, of a cycloplegic having been used surreptitiously, the prompt contraction of the pupil to eserine points to the dilation being due to pure paralysis uncomplicated by drug action. The power of accommodation seems to be about one third of normal for the boy's age, the binocular accommodative power being no better than the monocular. Neither convergence-power nor field of vision could be accurately tested, but the rough tests, which alone were possible, did not show any marked defects.

The boy is well nourished, fairly intelligent for his age, without signs or history of congenital syphilis or of serious illness or injury during his life. In all respects except his sight he is well and healthy, and the unusually persistent condition of the "ophthalmoplegia interna" remains unexplained.

Temporary Nystagmus and Divergent Strabismus occurring in a Child after a Fall.

(Under the care of Mr. MICHAEL TEALE in the Eye Department of the Leeds Public Dispensary.)

BERTHA N—, aged 8 years, was seen in the Eye Department on March the 9th of this year, having fallen down twelve stairs on the previous day. There was apparently no loss of consciousness, but the child was said to have been dazed for a short time by the fall. No bruise could be found

when examined at the Dispensary, but it seemed certain that the child must have struck the left side of her head.

Shortly after the accident she complained to her mother definitely that she saw two things instead of one and that she felt dizzy. Moreover she was noticed to have difficulty in walking and standing. For these reasons she was brought for advice.

When examined her eyes showed marked rotatory nystagmus in all positions of the eyes, together with divergent strabismus and considerable loss of power of the left internal rectus, the excursion of the globe produced by its action being only about half the normal. The child looked well and had not had any vomiting or headache, but she obviously found difficulty in standing upright owing to giddiness. Examination of the fundi showed marked engorgement of the retinal veins.

The child was sent to bed and kept quiet, and on the following day, that is to say, on the third day after the fall, the nystagmus and divergence were found to have passed off. After ten days in bed, during which time she seemed to be quite well, she was allowed to get up and play about as usual. Examination of the fundi at this time showed the veins of the right eye to be of normal size but those of the left to be still somewhat full, although much less so than before.

The transient nature of such important symptoms is of considerable interest.

Abstracts from Current Literature.

Medicine.

Milk epidemics (*The Canada Lancet*, December, 1908).—**Goodchild.**—There is no doubt that numerous epidemics of enteric fever, diphtheria, cholera, sore throat, and scarlet fever have occurred in which milk has been the medium of conveyance and multiplication of the specific microbes. In typhoid fever the organism has gained entrance to the milk through water used for washing the milk-cans or some other source. In most of the milk epidemics of diphtheria it has not been possible to trace the source of the infection, but this is not to be wondered at, as we cannot always exclude diphtheria from a class of diseases which appear to arise at times from ordinary insanitary conditions, and also slight cases of diphtheria are very difficult to trace, being often not recognised as such. In those epidemics of scarlet fever which have been traced to milk the milk has usually been infected through human agency by a previously inadequately isolated case of scarlatina at the farm or dairy. There is no evidence of this disease being conveyed by water or air. In the United Kingdom the epidemics have long been recognised, and the view advanced by Klein and others that the cows sometimes suffer from scarlatina is not generally credited. As to diphtheria, numerous milk-born outbreaks have been reported. For example, in 1886, in England, an outbreak of seventy cases occurred, all the sick having received milk from the same dairy. With regard to tuberculosis, the bacilli may enter milk not only from tubercular cows and infected stables, but also from tuberculous people. The danger is lessened by the fact that the bacilli do not multiply in milk. It has long been known that tuberculosis can be acquired by ingestion, and that many people have been infected with tubercle through the milk of cows suffering from the disease;

the question is to what extent are children the victims of this infection. Von Behring says milk is the chief cause, but this is not usually accepted, but the British Royal Commissions considered that an appreciable part of human tuberculosis is obtained through this food, and the largest part of this is by means of milk containing tuberculous matter. In Paris thirteen school-girls became infected through the milk from a cow with a badly infected udder. Finally the Royal Commission of 1901 reported that there was no essential difference between the tuberculosis of human beings and that which affects bovine and other animals. J. PORTER PARKINSON.

The composition of small curds in infants' stools (*Boston Med. and Surg. Journ.*, January, 1909, p. 13).—**Fritz B. Talbot** states that in the past few years there has been much discussion as to the composition of curds in infants' stools. There have been two main contentions, the one that curds are composed of casein, and the other of soaps. From a number of observations he concludes that a stool containing small curds is of a soft, semi-solid consistency, and can be broken up easily. The smell of it varies with the reaction; when acid it has a faint penetrating acid odour; when neutral or alkaline the odour is usually offensive. These small curds are found in many clinical conditions as well as in primary gastro-intestinal disturbances. They are composed mainly of fat, mostly in the form of fatty acid and soaps. There is no evidence that they contain casein-like material, and they have, as have normal fæces, a low percentage of nitrogen. They represent the fat in the aliment rather than protein.

JAMES SAWYER (Birmingham).

Pseudo-hypertrophic paralysis in an advanced stage (*Glasgow Med. Journ.*, July, 1908).—**R. Barclay Ness**.—The patient was a boy, aged 13 years, and was one of a family of six. None of these were affected in the same way as the patient. Between three and four years of age he was recognised as being in an early stage of the disease. He then had large calves, waddling gait, lordosis, and the characteristic way of arising from the supine to the erect position. The succeeding years had been marked by a gradually increasing failure of muscular power and by great wasting of muscles. At the age of thirteen years the boy showed great emaciation and general helplessness. Lying on his back he could only to a slight extent pull up and extend his legs. He could move his arms slightly, but they were quite flail-like. He could not raise himself into the sitting posture. Placed in this position his back became markedly curved (kyphosis). Any attempt with hands in the armpits to raise him by the shoulders only elevated the scapulæ and brought them together on the back, all support having been evidently lost by the wasting of such muscles as the pectoralis major, latissimus dorsi, serratus magnus, etc. He could not support himself on being placed on his feet. Both knees were partially flexed from contracture of the hamstring muscles, and could not be extended. Both feet were in the position of talipes equinus from contracture of the calf muscles. There was such weakness of the extraordinary muscles of respiration that the child could not easily by coughing clear his bronchial tubes of mucus. The life of the patient in this advanced state depended on the progress of the increasing muscular weakness and the chance occurrence of some pulmonary complication. Complete rest for any time was considered a mistake, as the muscles rapidly waste and the patient becomes gradually more and more helpless. JAMES E. H. SAWYER (Birmingham).

Tobacco poisoning in an infant one year old (*La Clin. Infant.*, February, 1909, No. 8, p. 68).—**J. Lemaire** reported this case to the Société de Pédiatrie. The child found a "Three Castles" cigarette and ate it. At 6 o'clock he took his evening meal, and then was put to bed and slept for an hour; he then woke, and cried and vomited; diarrhoea, pallor, and cold sweatings followed. At 9 o'clock he was prostrate and drowsy, very pale, with cold extremities, but no disturbance of pulse or respiration; from time to time there was yawning, followed by nausea and vomiting, in which were found particles of tobacco. Diarrhoea continued, many particles of tobacco passing with the stools. Tea with a small quantity of brandy was given, and warmth applied. About midnight he went to sleep, and woke the next day quite well. Authors describe two forms of tobacco poisoning. 1st. Acute, but slight, with sense of malaise, nausea or vomiting, headache, vertigo, cold sweatings, and faintness. 2nd. Acute, severe form, with headache, vertigo, disturbance of sight and hearing, slow pulse, dyspnoea, vomiting, weakness and stupor, then profound collapse with intense dyspnoea, and death by asphyxia. The cigarette eaten contained about 1 gr. 20 mg. tobacco, corresponding to nicotine mg. 2.04.

VINCENT DICKINSON.

Congenital pigmentation of the scrotum (*La Clin. Infant.*, October, 1908, No. 20, p. 616).—**M. Fayolle** describes the case of a child, aged 11 days, who presented a hyper-pigment action uniformly distributed on the skin of the scrotum, which was of a dark-brown colour. The zone of pigmentation was limited behind by the insertion of the scrotum or the perinæum; at the sides it ceased at about 1 centimetre from the genito-crural furrow; in front it disappeared about 5 millimetres below the root of the penis. This organ, with the prepuce, was not coloured. There was no other pigmentary mark on the surface of the body nor on the mucous surfaces, and the general pigmentation of the skin was normal. There was no other malformation. The case seemed analogous to three others shown at the Société de Pédiatrie by M. Variot, in which the pigmentation was due to granules of melanin localised in the deep layers of the Malpighian stratum, without any change in the dermis, identical with the skin of a negro. Congenital pigmentation of the scrotum in white races is not very exceptional, and is an exaggerated and precocious manifestation of the pigmentation which is normal in this region of the skin after puberty.

VINCENT DICKINSON.

On changes in the milk globules (*Rev. d'Hyg. et de M'ed. infant.*, vol. VII, No. 4, 1908, p. 309).—**G. Alessi** and **E. Carapelle**, after making a comparative series of experiments on goats, cows, and women during and after gestation, both in health, and, with regard to the latter, during certain diseases such as malaria, cystitis, morbus cordis, and tuberculosis, have obtained the following results. The morphological changes met with may be divided into three principal classes: the first and most usual is the disappearance or deficiency in fatty substance, the milk globules having little or no fat in them. In globules in which the fat is simply diminished it occupies a segment of the cell, and here it is either heaped up in the form of granules or disseminated in the form of nodules throughout the cellular element. This phenomenon is associated with all the organic conditions, physiological and pathological, in which the elaboration and utilisation of fat are invoked to take part in the various organic activities in the formation

of milk. During pregnancy, as the destruction of fat is gradually progressive, the impoverishment of the cells never goes so far as complete disappearance, but the galactophores become small zones of protoplasm, much reduced in size and without definite shape. Similar phenomena are met with in cases of wasting in nurses either due to deficient food or to diseases which cause general lowering of tone. The second class of changes in the milk is connected with the production of giant galactophores under the influence of physiological and pathological conditions. These giant cells appear in the milk at the end of gestation, and are found immediately after parturition: they also make their appearance in the milk whenever the organism is subjected to morbid intoxications, intestinal or tubercular. One means of recognising physiological giant cells is the yellow tint of the granules they contain, and which is present in all cases, thanks to an almost normal butyric refraction. A third class of changes consists in the appearance of a viscid substance in the milk, which causes a tendency for the globules, whether normal or abnormal, to agglutinate. This condition is concomitant with the other changes in the milk. Besides these changes which are recognisable by the microscope, there are special conditions in which the milk may become harmful to sucklings by diminishing organic resistance and creating a morbid susceptibility. These cannot be due to the passage into the milk of toxic substances taken by the nurse or produced in her by characteristic pathological conditions, neither can they have any connection with the presence of more or less hypothetical ferments in the milk: they are simply the outcome of cytological changes in the elements of the milk, and emphasise the direct relation which exists between changes in the milk globules and disturbances in the health of the nursing.

VINCENT DICKINSON.

Three attacks of scarlet fever (*Monats. f. prakt. Derm.*, 1908, p. 224).—**Kurson** records a case in a boy who had a first attack on November 4, 1904, a second on January 4, 1905, and a third on April 3, 1906. On each occasion the disease ran a typical course (eruption, follicular tonsillitis, pyrexia and desquamation), and was followed by no complications.

J. D. ROLLESTON.

Scarlatiniform eruption in Vincent's angina (*Zentralb. f. innere Med.*, 1908, p. 629).—**P. Eisen**.—A girl, aged 6 years, was admitted into hospital with the diagnosis of diphtheria. Clinical and microscopical examination showed the existence of Vincent's angina. A scarlatiniform eruption was present on admission on the trunk and limbs, but disappeared the following day. Temperature 100° F. The child was kept under observation for seven weeks, but showed no trace of desquamation. The diagnosis of scarlet fever was rendered improbable by (1) the transient character of the eruption, (2) the complete absence of desquamation, (3) the slight degree and transient character of the pyrexia.

J. D. ROLLESTON.

Diphtheria at the Hôpital Hérold (*Bull. et Mém. de la Soc. méd. des Hôp. de Paris*, 1908, p. 308).—**Barbier, Boudon and Pélissier**.—During the years 1904–1907 inclusive, 890 cases of diphtheria were admitted into the Hôpital Hérold, in Paris; 99 died—a mortality of 11·1 per cent. On eliminating those cases which died within twenty-four hours of injection as well as those in which death was independent of diphtheria the fatal cases

were reduced to 48—a mortality of 5·7 per cent. Barbier thinks that severe diphtheria is due to delay in the administration of antitoxin, and illustrates this by the fact that when the disease occurs in several members of the family the first child to be attacked, who, as a rule, is not injected till late, suffers most, and may be the only fatal case. Illustrative cases are given, as well as numerous tables dealing with monthly admissions, the character of the attack, intubation, complications, and superadded diseases.

J. D. ROLLESTON.

Hæmoptysis in children (*Journ. de Méd. de Bordeaux*, No. 43, 1908, p. 677).—**Rousseau-Saint-Philippe**.—Hæmoptysis is rare in children. It is found (1) in whooping-cough. In most cases the blood comes from the turgescient nasal fossæ, but it may sometimes be due to broncho-pneumonia. (2) In cases of foreign bodies lodged in the deep respiratory passages. (3) As a supplemental hæmorrhage in girls between the ages of 7 and 8 years, often alternating with leucorrhœa. (4) In pulmonary congestion, influenza, and, rarest of all, in pulmonary tuberculosis.

J. D. ROLLESTON.

Diphtheria in Buda-Pesth (*Centralbl. f. Laryng.*, 1908, p. 444).—**S. V. Gerlóczy**.—The case mortality among 558 cases treated with antitoxin at St. Ladislaus' Hospital in 1906 was 11·6 per cent. Intubation was performed in 66 cases, of whom 35 recovered. Laryngeal ulceration following intubation occurred in 6, and in 2 a perilaryngeal abscess. Secondary tracheotomy was performed in 4 cases, all of which were fatal. Palatal and laryngeal palsies were noted in 21 cases; 59 cases suffered from a mixed infection, in most cases scarlet fever.

J. D. ROLLESTON.

Diphtheria in Havre (*Thèses de Paris*, 1907-1908, No. 380).—**Chevreil**.—The diphtheria case mortality at the Havre Hospital prior to the introduction of antitoxin in 1894 was 56·9, but since then has been considerably reduced. Thus the mortality among 595 patients who have been treated at this hospital during the last ten years was 14·3 per cent. Even this figure might have been much lower had not serum treatment been delayed, partly through the fault of the parents and partly through that of the family doctor. Of 88 deaths 32 took place within twenty-four hours of admission. Among the 213 aged from 0-2 years the mortality was 22·0 per cent., while among 382 between 2 and 15 years it was 10·7 per cent. 248 intubations were performed and 21 tracheotomies. The prophylactic injection of all young children who had been in contact with a case of diphtheria is recommended.

J. D. ROLLESTON.

The sequelæ of scarlet fever (*Jahrb. f. Kinderheilk.*, Bd. 65, 1907, *Erg.-Heft*, p. 132).—**B. Schick**.—In this important paper, which is based on the study of 1692 cases of scarlet fever, the following sequelæ are discussed. (1) Post-scarlatinal fever: In the period comprised between the twelfth day and the seventh week, most frequently in the third and fourth weeks, a rise of temperature, usually without constitutional disturbance, occurs, for which neither at the onset nor later is any abnormal condition of the organs to be found; (2) Rheumatism: As a rule this occurs towards the end of the first week or in the course of the second, and may be associated with endocarditis, the onset of which is often insidious. The fever accompanying endocarditis is usually remittent, and ends by lysis. In all Schick's cases of endocarditis

the initial attack had been mild. Rheumatism occurring later than the second week is rare. Schick had seen only four such cases—three in the third and one in the fourth week. (3) Secondary adenitis: This may occur as an herald or as an accompaniment of nephritis and also as an independent sequela. It subsides long before and is more frequent than nephritis. Nephritis and secondary adenitis do not occur before the twelfth day or later than the sixth week, most cases being found in the third or fourth week. (4) Relapses: Schick has collected 72 cases, including 13 personal ones. Like the other sequelæ of scarlet fever they occur most frequently in the third or fourth week. It is doubtful whether the initial attack and the relapse are to be attributed to the same infection, or whether the relapse owes its origin to a fresh infection from without. Schick, like Henoeh, thinks that the scarlatinal virus has not been completely eliminated by the primary attack. In discussing the cause of the interval between the primary symptoms of scarlet fever and the appearance of the above sequelæ, Schick suggests that at the usual time for the onset of sequelæ the organism has a diminished power of resistance or else is super-sensitive. This period of diminished resistance or of super-sensitisation lasts from the end of the second week till the seventh week, and is most marked during the third and fourth weeks, after which the tendency rapidly diminishes. The hypothesis of a specific sensitiveness of the organism after scarlet fever has an analogy in other morbid processes, *e.g.* in typhoid fever and in the serum disease.

J. D. ROLLESTON.

Blood-pressure in scarlet fever (*Bull. de la Soc. de Péd. de Paris*, 1908, p. 102).—P. Nobécourt and L. Tixier studied the arterial pressure with Potain's sphygmomanometer in 33 scarlet fever patients of both sexes, whose ages ranged from 2 to 16 years. They found that, as a rule, the pressure sinks from the beginning of the disease until the sixteenth day, that less frequently it remains stationary, and that in a few cases it rises. After the sixteenth day it usually rises again, while in a few cases it remains stationary. Change in diet, the character of the attack and the presence of complications have no appreciable influence in altering the pressure.

J. D. ROLLESTON.

Congenital laryngeal stridor (*Arch. of Pediat.*, 1908, p. 607).—A. W. Myers records a case in a female child whose respirations had been very rapid since birth. When she was a week old the respirations became laboured, and a crowing sound was heard with inspiration. Stridor became more marked, the inspiratory difficulty increased and bulging forward of the sternum occurred on inspiration. There was no cough nor cyanosis. An irregular quadrilateral mass corresponding to the thymus was outlined by percussion behind the upper part of the sternum. The larynx was normal. The child was subjected to X-ray treatment for three months. Steady improvement occurred, while the size of the thymus diminished. Two months after the treatment had been stopped the thymic dullness had quite disappeared and the respiration was normal. There was a slight tendency to pigeon-breast, which subsequently became less.

J. D. ROLLESTON.

Gangrene of the skin in scarlatinal rheumatism (*Berlin. klin. Wochenschr.*, 1908, p. 1345).—Heubner.—A boy was taken ill with mild scarlet fever on December 21. Secondary adenitis without nephritis occurred in January. Three days later he developed violent pain in the

knees and then in the elbows, fingers, and wrists. At the same time reddening of the skin appeared in various areas, first on the right elbow and then on the back of the right hand and buttocks. On January 17 the skin over the right elbow-joint became gangrenous, but none of the other reddened areas became similarly affected. The gangrenous area, which was 9 cm. long and 8 cm. broad, separated by February 2. When seen five months later the wound had almost completely cicatrised. The joint movement was free. According to Heubner no similar case has been recorded. As a rule, post-scarlatinal cutaneous gangrene is either located in the neck, when it is secondary to a diphtheroidal condition of the fauces, or is the result of embolism. In the present case Heubner excludes embolism owing to the extensive network of vessels which supply the skin of the elbow, and regards the gangrene as due to a vaso-motor disturbance of the skin, a slighter form of which sometimes accompanies scarlatinal rheumatism.

J. D. ROLLESTON.

Recurrent herpes of the cheek (*Bull. de la Soc. de Méd. de Rouen*).

E. Delabost showed a boy, aged 11 years, with a large solitary vesicle on the front of the right cheek. Though there was only a single lesion instead of a cluster of vesicles, the diagnosis of recurrent herpes was made, since Delabost had treated him twice before for facial herpes, and the father stated that every year since birth the child had presented a crop of herpes in exactly the same situation, and about the same time of year. Two miscarriages had preceded the birth of his child, but no signs of congenital syphilis were present (*cf.* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1907, p. 502).

J. D. ROLLESTON.

Note on variations in the composition of human milk (*Bull. de la Soc. de Péd. de Paris*, May, 1908).—**Barbier** and **Masere** have made some very important observations on this subject. Their conclusions, derived from numerous analyses of the milk of nursing women are: (1) there is no general composition of the milk of women at different ages; (2) the composition of the milk in the same women varies at different hours of the day; these variations follow a well-marked curve; (3) the composition of the milk can be changed by alterations in the diet. With nursing women under same conditions of food, etc., some striking changes are found in the milk at different ages. Lactose is fairly constant in quantity, but the caseine and fat vary considerably, *e.g.* in the latter from 25.10 per cent. to 43.30 per cent., 70.65; the caseine from a minimum of 6.96 per cent. to a maximum of 19.50 per cent. As to the effect of alterations in diet the authors cite this case. A breast-fed infant, aged 3 months, commenced to suffer from dyspeptic troubles. The milk was found to contain excess of caseine; after various changes in suckling, meat was entirely left out of the mother's diet. In five days the infant, who was losing weight, now put on 260 grammes. On adding meat again the rate of increase in weight was diminished, to go up when meat was again left out. The writer admits that there are probably many factors in the dyspepsia of sucklings, but he believes that in some cases it may be due to mothers' milk. This should always be analysed and attempt made to correct it by alterations in her diet.

M. D. EDER.

On the existence and causation of rickets (*St. Petersb. med. Wochens.*, July 9, 1908).—**Jürgensohn**, after a detailed account of the

symptoms and chemico-physical analysis of human and cows' milk, states that rickets is a disease conditioned by the feeding. From a chemical standpoint the food is at fault, due to a disproportion between the osmotic pressure and the electrical conductivity. In consequence we find increased vascularisation, and more especially changes in absorption and exudation, as seen, for instance, in the bones, the brain, and the galvanic super-excitability of the nerves.
M. D. EDER.

Remarks on two cases of hæmorrhage in new-born children (*Austral. Med. Gaz.*, August 20, 1908).—**Morton's** first case was a female child who had profuse bleeding when forty-nine hours old; death ensued in nine hours. At the post-mortem a fresh clot was found in the duodenum, where there was a perforation about an inch above the opening of the bile-duct. The stomach was healthy. The mother had been known to bleed for thirteen hours from a tooth extraction, and her first child had bleeding from the bowel on the first day of birth. The second case occurred in an infant, aged 48 hours, and was of similar nature—bleeding from the mouth and slight ecchymosis on one eyeball; the infant recovered. Here there was no suggestion of hæmophilia.
M. D. EDER.

The immediate treatment of infantile paralysis (*Intercol. Med. Journ.*, August 20, 1908).—**MacKenzie** regards the proper treatment of the muscle as the solution of the difficulty. He places the muscle at rest. Its work is resumed very gradually, preventing at the outset any motile tendency. Then he places the arm in a splint, elevated at a right angle, with slight supination of the forearm. In a case with both quadriceps extensor muscles affected a double Thomas's splint was used. With early treatment recovery is almost certain.
M. D. EDER.

Rubella—a new diagnostic sign (*La Seman. Méd.*, July 30, 1908).—**De Leon** maintains that a blood examination will differentiate rubella from measles or scarlet fever. In rubella there is (1) hipolencocytosis, which reaches its height during the eruptive stage; (2) mononucleosis, which also reaches its height during the eruptive stage; (3) eosinophiles are much decreased during the eruption and somewhat increased during convalescence. In measles and scarlet fever there is, on the contrary, polynucleosis.
M. D. EDER.

The conjunctival reaction for tuberculosis (*La Medicina de los Niños*, April, 1908).—**Vargas** regards this test as the safest and easiest in children. He recommends that the tuberculin be diluted 1 in 200 instead of the more usual 1 in 100. One or two drops are instilled in the inner canthus. The reaction commences some four or five hours later; at first a slight hyperæmia of the caruncle and inferior palpebral conjunctiva which spreads to the bulbar conjunctiva; later there is lachrimation and fibrinous exudation, especially in the lower sac. After twenty-four hours the symptoms abate, and disappear entirely within forty-eight hours. The test should be applied to both eyes. In seven cases where tuberculosis was recognised clinically a positive reaction was obtained in twenty-four hours.
M. D. EDER.

Chronic family acholia (*Med. Press*, August 26, 1908).—**Pollak** showed, at the Gesellschaft für Innere Medizin at Vienna, a girl, aged 8 years, with all the symptoms of icterus affecting the skin, sclerotics, and mucous

membrane. In addition the spleen was greatly enlarged, extending for two inches below the costal margin, and was hard and resistant. The urine showed no trace of bile, although urobilin and urobilinogen were present in large quantities. The stools were not acholic and seemed normal. The jaundice was a family characteristic, as the grandmother, mother and other sisters were similarly affected.

T. R. WHIPHAM.

Examination of the stools of infants (*'Interstate Med. Journ.,'* December, 1908).—**Zahorsky** states that it is becoming generally recognised that the so-called curds in the stools of infants are not casein coagula but soaps composed principally of the fatty salts of calcium. In appearance the curd composed of soaps is more granular, and it is readily crushed by a spatula. It does not, however, become tough and leathery after several hours' immersion in strong formalin like the casein coagulum. Calcium soap is almost entirely soluble in absolute alcohol acidulated with 10 per cent HCl, whereas casein curd is not. From masses in the stools the fats and soaps may be dissolved by petroleum ether, hot water and acid alcohol. After successive washings a small residue remains, consisting of bacteria, cells, mucus, and rarely casein. Tincture of iodine and carbol fuchsin will readily stain the curds; those consisting of soaps are easily decolorised by alcohol, while casein retains the stain. After a large series of tests the author is convinced that casein coagula in the stools are very rare. The colouring matter in yellow stools is chiefly bilirubin, which can be extracted with chloroform. Chloroform, however, does not dissolve the green pigment of green stools. This can be removed by acidulated alcohol and is probably biliverdin. The oxidation of bilirubin to biliverdin probably depends upon the action of micro-organisms. In like manner it is the action of bacteria which reduces the yellow bilirubin to the white hydrobilirubin, which forms the principal pigment in light and clay-coloured stools. This occurs after the seventh day in artificially fed babies. If a concentrated solution of corrosive sublimate be added to fresh fæces containing hydrobilirubin a peculiar red discoloration is produced, thus differentiating between suspected acholia and the light stools of so-called milk indigestion.

T. R. WHIPHAM.

Pathology.

A case of anæmia in an infant connected with the growth of a prelumbar tumour (*'Bull. de la Soc. de Péd. de Paris,'* May, 1908).—**Ribadeau-Dumas** and **Camus** report the case of an infant, aged 1 month, who was seen on account of jaundice. On examination an abdominal tumour was found occupying all the abdominal region. A blood examination showed some anæmia with hyper-leucocytosis due chiefly to polynuclears. The child died three days after admission. A post-mortem was made; all the organs were normal, although displaced by the tumour. This weighed 500 grms., was the size of a foetal head at term, and was bound to the right lumbar fossa and spine; it covered the right kidney and passed the median line. The tumour was on the whole extremely vascular; histologically it was a teratoma, a neoformation of Malpighian epithelium, with cartilaginous and osseous plaques. Schandinn's treponemata were absent, nor were there any other signs of syphilis. The authors conclude that the anæmia was due to the teratoma and followed the hæmorrhages which were found at the autopsy.

M. D. EDER.

Researches into the hæmoglobin content of tubercular children (*'La Pédiat.,'* October, 1908, No. 10, p. 723).—**Carlo Lorenzi** contributes an extensive paper on this subject based on repeated observations on sixteen cases, which are fully described and the results tabulated. The results show that (1) the number of red corpuscles diminishes in proportion to the gravity of the illness and rises when an improvement in the general condition occurs. Alteration in form is shown by more or less marked frequency of microcytes with or without poikilocytosis. (2) The hæmoglobin content is relatively below the number of red corpuscles. Oligochromæmia becomes more marked with the advance of the disease, and is usually more marked in the marasmus of chronic forms. It improves with the general condition. (3) The relative amount of iron remains always below the corresponding amount of hæmoglobin. This inferiority is more marked when the disease is progressing, and tends to disappear, on the other hand, when the acuteness of the disease diminishes. (4) The globular value, calculated with respect to iron, is always inferior to that of the hæmoglobin, but their variability is not always proportionate, although they are both in relation with the course of the disease and the general state of the patient. (5) The author's researches in a general way lend support to the theory of Bard with regard to variations in the quality of the hæmoglobin, and he is of opinion that in infantile tuberculosis the alterations in the relation of iron and hæmoglobin are chiefly referable to a condition of hypohæmatopoiesis.

VINCENT DICKINSON.

Therapeutics.

Necrotic angina and perforation of the palate in scarlet fever (*'Thèses de Paris,'* 1907-1908, No. 139).—**F. Langlais**.—This thesis contains the histories of fifteen cases, five of which have hitherto been unpublished, of necrotic angina and perforation of the palate during scarlet fever in children whose ages ranged from 11 months to 8½ years. These complications are peculiar to cases in which there is profound intoxication. Nasal discharge, with ulceration of the nostrils and ulcerative lesions of the labial commissures, which bears some likeness to perlèche, but more closely resemble the rhagades of congenital syphilis, are frequent concomitant phenomena. Contrary to what occurs in syphilis, perforation of the palate in scarlet fever is not manifested by any functional symptom. The voice is not nasal. Bacteriological examination of the ulcerative lesions usually shows diplococci, never anaërobic organisms as in gangrenous angina. The prognosis is grave. Of the fifteen cases only four recovered. Treatment is usually of no avail.

J. D. ROLLESTON.

Otology, Laryngology, and Rhinology.

A case of gonococcic otitis (*'Monatschr. f. Ohrenheilk.,'* 1907, p. 436).—**Reinhard** relates the case of a child, aged 14 years, who was suffering from gonorrhœal ophthalmia, and developed a discharge from the right ear; the pus was profuse and creamy white. On acetic agar Gram-negative diplococci were found. Rapid healing followed irrigations of permanganate of potash 1 in 5000, and instillations of 1 per cent. protargol.

MACLEOD YEARSLEY.

Acute poliomyelitis following tonsillitis (*Boston Med. and Surg. Journ.*, October 15, 1908).—**Kendall Emerson** describes the case of a boy, aged 8 years, who got very wet in a shower at a time when he was very tired. Next day he had high fever and sore throat. He passed through an attack of tonsillitis, with rather extreme toxic symptoms, cultures showing a mixed infection without diphtheria bacilli. Recovery was prompt, but five days after the onset of the tonsillitis he complained of tingling in the left hand. This extended to the forearm next day, and to the shoulder the day following. It was accompanied by headache, becoming more severe, and extending down into the posterior cervical region. The third day he was feverish, with the head retracted and severe pain in the left arm. His attitude and appearance suggested meningitis. It was not until five days later that there was paralysis of the deltoid and upper arm muscles, and two days later there was no power in any muscles of the arm or forearm save extremely weak flexion of the fingers. The points of interest in the case are the relation of the tonsils as a point of entry and the very gradual onset of the paralysis.

MACLEOD YEARSLEY.

Laryngitis stridulus (*Münch. med. Wochens.*, No. 41, 1908).—**Rahner**, as the result of laryngoscopic investigations during and after an attack, casts doubt on the explanation that the night pseudo-croup of children is a spasm of the larynx, and holds that an œdematous swelling of the sub-glottic tissues is the cause of the condition.

J. E. BULLOCK.

Surgery.

Imperforate anus (*Arch. of. Pediat.*, 1908, p. 678).—**E. B. Hodge** reports a case in which the rectum communicated with the prostatic urethra in a boy, aged 6 days, who was admitted into hospital with a greatly distended abdomen. The bowels had not acted since birth, but some black material had come from the urethra. The urine was greenish at first, but became clear towards the end of micturition. On admission no trace of the anal site was found. At the operation, which lasted fifteen minutes, a median perineal incision in front of the coccyx was made without an anæsthetic. At the depth of an inch the rectum was found, incised, and sutured to the skin. Improvement followed, but death occurred owing to the mother refusing to nurse him.

J. D. ROLLESTON.

School Hygiene.

School hygiene (*Austral. Med. Gaz.*, July 20, 1905).—**Evans** observed that all class-rooms are too small for the number of pupils; they are insufficiently ventilated and improperly lighted. A growing child needs as much air-space as a full-grown adult. He recommended the pavilion plan of building with windows and doors on eastern and northern sides; schools should be one story high. Artificial ventilation was necessary, and light should fall on the left side of pupil. The Sheffield system of desks was the best, and a vertical style of writing less likely to produce deformities than the slanting one. No lesson should exceed half an hour, and there must be plenty of intervals. He recommended the teaching of hygiene with lessons on suitable food, the dangers of intemperance and tobacco. Medical inspection and its possibilities was dealt with in detail, and he considered it necessary that every secondary school should have a medical officer.

M. D. EDER.

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ADENOIDS AND NOCTURNAL ENURESIS.

By LEONARD WILLIAMS, M.D., M.R.C.P.,

Physician to the French Hospital, Assistant Physician to the Metropolitan Hospital.

I RECENTLY contributed to the 'Lancet' an article on the above subject, and the Editor of this JOURNAL has courteously invited me to develop some of the points which were therein of necessity very cursorily treated. My thesis in that article briefly stated was that, contrary to the teaching of the text-books, adenoids and nocturnal incontinence do not stand in any causal relationship to one another, and that when they happen to be associated they are due to a common cause, namely an insufficiency of the internal secretion of the thyroid gland. I showed that a large proportion of cases of enuresis may be cured and the vast majority ameliorated in a comparatively short time by the discriminating exhibition of thyroid extract. I am not at present prepared to make the same assertion with regard to adenoids, though several of the cases which I have at present under observation encourage the hope that these troublesome vegetations may eventually be spirited away by means purely medicinal, and the 80 per cent. of children who are said to suffer from them thus rescued from the enemy.

When, in 1874, Meyer first described adenoid vegetations, their very existence was stoutly denied, and he was accused of having invented a bogey. Ultimately, however, his views obtained credence, and, as usually happens in such cases, professional opinion swung to the other extreme; so that now for some years past adenoids have been confidently regarded as the source of almost every ill to which childhood's flesh is heir. Careful observers were not slow to point out that the victim of adenoids possesses a special facies: the listless eye, the snub nose, the open mouth, which displays the rabbits'-teeth; and that the jaws, more especially the upper, are badly developed, giving rise to characteristic deformities, of which the Gothic or high-arched palate is the most constant. Inasmuch as these features were all found as associates or accompaniments of adenoids, they were, naturally enough perhaps, attributed to the action of these vegetations in blocking the nasal air-way. The time seems now to have arrived when it would be well to revise this attitude, for it is quite certain that many of the so-called consequences may, and frequently do, arise quite independently of their supposed cause.

It has been the same with nocturnal enuresis. Because this troublesome, unpleasant, and socially disabling condition is frequently found in association with adenoids, the latter have been, and still are, cited as a cause of the former, in spite of the fact that removal of the adenoids is admitted, even by laryngologists, to afford a very uncertain prospect of cure for the enuresis. I think I have adduced sufficient evidence to convince unprejudiced minds that the association between these two is purely incidental, that the one may occur without the other, and that both are manifestations of the same underlying cause. My purpose in the present paper is to call attention to some of the minor, the less obvious manifestations of the same cause, so that thyroid insufficiency may be recognised and treated before it has produced structural deformities or rendered a young life miserable.

In the series of cases which Mr. Sydney Vosper and I have had under observation at the Metropolitan Hospital one fact has emerged very prominently, and that is that the majority of the cases of enuresis which were successfully treated by thyroid extract showed a subnormal temperature at the outset, and that the temperature gradually rose to normal as the incontinence subsided. Nor was this subnormality of temperature purely objective. All the children had cold extremities, with fingers that "go dead." Most of them were grossly over-clothed. Remonstrances on this latter point were

always met by the objection that it was impossible otherwise to keep the children warm, and that even so they were always hugging the fire. The older patients asserted that they felt cold even in summer time, and that they were always worse at night. This depression of temperature, especially of nocturnal temperature, is a marked and characteristic feature of complete myxœdema, and it is therefore not surprising that it should appear to some extent in minor degrees of thyroid insufficiency. Out-patient work does not lend itself to the accurate estimation of temperatures, so I requested that very careful observations should be made in one case, an inmate of the French Hospital. The chart shows that during the period of his enuresis his evening temperature was generally 96.2° F., and his morning, 97.2° F.

It is interesting to note that my solitary case of complete failure never had an afternoon temperature below 98° F., and that during the thyroid treatment it rose to 99° F.

The constancy of this sign of subnormal temperature in association with the cases of nocturnal enuresis which are successfully treated by thyroid extract, and its disappearance coincidently with the enuresis, might lead one to suppose that the incontinence was due to the subnormal temperature, especially as even in health the application of cold is known to provoke micturition. Such is not, however, the view which I wish to advance. I believe that both these conditions are due to thyroid insufficiency. That the one is I have already sufficiently contended; that the other—the depression of temperature—is so too, I find supported, not only by the argument from the case of myxœdema, but also by the statement of Léopold-Lévi and H. de Rothschild,* who have made a most careful study of the functions of this gland, that the thyroid is “un véritable calorifère de l'organisme,” and that of Dr. Harry Campbell† that the “thyroid secretion plays the part of a bellows, causing the vital fire to burn more fiercely.” Among the least obvious but most readily ascertained symptoms of thyroid insufficiency, I would, therefore, place a persistently subnormal temperature, especially when the depression is greatest at night. Such a state of matters may be suspected if a child is unduly chilly, if its hands and feet are always cold, but more particularly if, when it contracts a febrile disease, such as measles or scarlet fever, the temperature falls

* ‘Études sur la Physio-Pathologie du Corps Thyroïde,’ Paris, 1908 (Octave Doin), p. 47.

† ‘Lancet,’ May the 24th, 1902.

markedly short of the elevation which usually accompanies the disease.

A second feature in the cases at the Metropolitan Hospital which struck Mr. Vosper and myself was that the majority of the children, when they first presented themselves, were undersized, and that nearly all of them weighed considerably less than they should have done. If this was, in some ways, only to be expected, the same cannot be said of the effect of the treatment, which, in the matter of the weight, was sometimes so astonishing as to give rise to a suspicion that some mistake had been made. This was notably the case with my first patient of this kind, who in six days from the beginning of the thyroid treatment had gained no less than 5 lb., and a week later had added another 2 lb. 7 oz. In this instance, at any rate, no mistake was possible, for I weighed the child myself in the presence of his mother, who made an independent note of the figures. Most of the patients at the Metropolitan Hospital showed the same phenomenon, though in a less marked degree, with the notable exception already mentioned, who, instead of gaining weight, lost it.

The fact that these children should have gained weight is very instructive. The purpose for which thyroid extract is most generally employed is the reduction of corpulence, and in suitable cases it effects this purpose admirably. How, then, can it be possible for it to have acted as it undoubtedly did in these cases? The answer would seem to be as follows: In order to produce emaciation it is necessary that the thyroid, either as secretion or extract, should be present in excess. This is seen in Graves' disease, in which some at least of the elements which compose the secretion are present in very great excess, and in which emaciation is a marked feature. Thyroid insufficiency, on the other hand, in adults is generally characterised by obesity. With children, however, it is different. With them an insufficiency which falls short of complete absence produces infantilism, the subjects of which are rarely corpulent. I am not now referring to the absolute athyroidia of cretinism (which differs from mere inadequacy as definitely as blindness differs from myopia), but to the various types of infantilism in which thyroid extract has triumphantly proved its curative value. The factor which decides this divergence between the results of thyroid insufficiency in adults and the same insufficiency in children, is provided by the fact that the need for the salts of calcium at the two periods of life is widely different. One of the most important functions of the thyroid secretion is admittedly that of fixing the

calcium salts in the tissues. Without a sufficiency of the secretion the salts cannot be utilised, bone-formation is defective, and the child fails to grow. In the adult there is not the same necessity for calcium, and the thyroid insufficiency shows itself chiefly by inadequate metabolism and the consequent excessive deposit of fat. It may, therefore, be laid down as a general rule that when a child is being treated by thyroid extract its weight should be ascertained and recorded at regular intervals. As long as there is a gain the remedy is doing good, but as soon as there is a definite fall the borderline of safety has been crossed, and the drug should immediately be suspended. The rule is subject to this reservation, that in children of a decidedly cretinoid type, during the brief initial period when the organism is ridding itself of myxœdematous tissue the weight may remain stationary, and may even decline. In all other cases, however, a progressive loss of weight affords clear evidence of an excess of thyroid in the system, and an indication for the immediate suspension of the drug.

In connection with this power possessed by the thyroid secretion of fixing the calcium salts in the body, it may be of interest to refer briefly to the question of the high-arched palate. This deformity is very generally regarded as the result of deficient nasal respiration caused by adenoids—an explanation which is certainly incorrect. Of my cases of nocturnal enuresis described in the 'Lancet,' all had the Gothic palate, but only about one half had adenoids. I satisfied myself as to the sufficiency of the air-way in those that had not, and made the most careful inquiry for everything which might suggest that adenoids had previously existed, without finding anything to support the suggestion. In all these patients nasal respiration was, and always had been, perfectly free. The case against adenoids in the causation of the Gothic palate was thus obviously not to be sustained. It then occurred to me that, having regard to the fact that all these children had shown themselves to be the subjects of thyroid insufficiency, the defect in this internal secretion might account for the oral deformity. It is known that the responsibility for fixing the calcium salts in the body is thrown upon the thyroid gland; bone formation cannot proceed properly without the help of calcium salts; might it not be that the bones in the palatine arch of the inadequately thyroidised child remain unduly soft by reason of their deprivation of calcium, thus causing them to yield to external pressure in such a way as to convert the arch from a Norman into a Gothic structure? In searching for some support for such an iconoclastic theory I was fortunate enough to find an article by

Professor Marfan,* of the Hôpital des Enfants-Malades in Paris, in which he shows conclusively that whatever be the cause of the Gothic palate, it is certainly not due to the action of adenoid vegetations. My friend, Dr. StClair Thomson, is of the same opinion, for he tells me that the palates of children whose adenoids he has removed have continued to become increasingly Gothic in character for considerable periods after the operation. I maintain, therefore, that the high-arched palate is one of the stigmata of thyroid insufficiency; that it is produced by the yielding of the palatine bones owing to their relative poverty in calcium salts, which, in its turn, is due to an inadequacy of thyroid secretion.

The same relative absence of calcium salts from the tissues, due to the thyroid insufficiency from which they were undoubtedly suffering, probably explains another feature which was very noticeable in the incontinent children at the Metropolitan Hospital: I mean dental caries. Every one of the patients had some bad teeth, and most of their mouths presented a depressing spectacle. Dental caries is often attributed to mouth-breathing. This habit is certainly not conducive to the preservation of the teeth, but the initial fault is obviously with the defences, which are inadequate by reason of the shortage in calcium salts.

In their admirable work Léopold-Lévi and H. de Rothschild† call attention to a sign of thyroid insufficiency to which they attach the name of "the eyebrow sign" (*signe du sourcil*). It consists in a rarefaction, amounting sometimes to complete absence, of the hair of the outer third of the eyebrow. The diagnostic value of the sign may be stated as follows: Deficiency of the eyebrows, even when the deficiency is confined to the outer third, affords a very strong presumption in favour of thyroid inadequacy, and should always lead to a careful search for confirmatory evidence, such as urinary precipitancy, subnormal temperature, a Gothic palate, carious teeth, urticaria, mental and physical lethargy. On the other hand, perfectly developed eyebrows are by no means incompatible with a high degree of thyroid inadequacy, as shown by persistent nocturnal enuresis and abundant adenoids. The eyebrow sign is one which has the merit of being very easily observed.

In the numerous cases in which during the last four months I have prescribed thyroid extract, I am happy to say that I have met

* "Le rachitisme dans ses rapports avec la déformation ogivale de la voute palatine et l'hypertrophie chronique du tissu lymphoïde du pharynx," *'La Semaine Médicale,'* September the 18th, 1907.

† *'Études sur la Physio-Pathologie du Corps Thyroïde'* (Octave Doin, 1908).

with none of those alarming consequences of which we are sometimes taught to beware. This has no doubt been due in part to the fact that the quantities employed have always been very moderate (5 grains three times daily being regarded as a very heroic dose), and in part to the constant observation under which the patients have been kept. Signs of intolerance have certainly manifested themselves, but with the exception of tachycardia, not in the directions in which I was looking for them. The most constant of these signs was nasal catarrh. The early months of this year, it may be remembered, were particularly inclement; so that at first the complaint that a child, though better in many ways, had nevertheless developed a "cold in his head," excited in me no suspicion that the cold and the treatment might be related. The regular recurrence of the complaint in almost every case where the drug had been taken for over a month eventually compelled me to associate the two, and I have now no hesitation in affirming that one of the most significant symptoms of thyroid excess is the more or less sudden occurrence of a catarrh of considerable severity, usually confined to the nose, and I regard its appearance as a warning to suspend the treatment.

As thyroid insufficiency is characterised by a subnormal temperature and sensations of chilliness, it might be expected that thyroid excess would be accompanied by a supernormal temperature and intolerance of heat. And such is the clinical fact. Experience has taught me when giving thyroid extract to children over considerable periods of time that the thermometer is as necessary a guide as the weighing machine. So long as the subnormal readings persist, the drug may be continued; as soon, however, as the temperature reaches normal, caution is necessary; and at the first indication of a rise beyond normal, the drug must be suspended.

TYPES OF PULMONARY TUBERCULOSIS IN YOUNG CHILDREN.

By JAMES MILLER, M.D.,

Visiting Pathologist to the General Hospital; Lecturer on Bacteriology at the University, Birmingham.

It might be thought that after so many years of careful investigation little that is new would be gathered from investigating a disease such as pulmonary tuberculosis. Yet the mere fact that the nomenclature of the disease is so complicated while the aetiology is

so simple ought to cause one to consider whether there is not some call for further inquiry.

For the past three years the author has been directing his attention particularly to tuberculous disease as it occurs in the infant, more especially to the manifestations in the lungs. For this purpose the material at his disposal is well adapted, as from October the 1st, 1906, to October the 1st, 1907, there were fifty-eight sections performed at the General Hospital on children of five years and under, and eleven of these died of tuberculous disease. The cases have been studied as regards their microscopic appearances and their relationship to disease in other parts. The lung sections have always been stained by one of the selective methods for elastic tissue. Too much stress cannot be laid upon the advisability of carrying out such staining methods in studying lung pathology. To quote the words of Letulle, "*Il est absolument indispensable de colorer d'une manière spéciale le tissu élastique du poumon : sans la coloration du squelette élastique, la tuberculose pulmonaire, les scléroses, les bronchectasies rendent obscures un nombre extraordinaire de lésions.*" It might be added that the sections ought at the same time to be as large as possible, preferably including the whole of the lung. The reason for this is that in tuberculous disease more than in any other a small portion of the lung taken for microscopic examination is not fully representative of the disease, and certainly gives but a small idea of the distribution and method of spread. In his investigations the author has made a practice of cutting very large sections, and in a large number of cases the whole of both lungs have been cut, *i.e.* upper and lower lobes, and mounted together on one slide. The method adopted is described in detail in two publications, '*Journal of Pathology and Bacteriology*,' August, 1905; '*Bulletins et Mémoires de la Société Anatomique de Paris*,' Tome vii, No. 7, 1905.

The larger sections have been cut on the Délépine freezing microtome. The photographs of the sections in this paper are printed direct from the preparation, using it as a negative.

Tuberculosis is one of those diseases which vary much in their manifestations. This is pre-eminently the case with the disease as it occurs in the lungs. It is not surprising therefore that the classification of these manifestations is a matter of some difficulty. In its essence the pathology of the disease is simplicity itself, but for various reasons pulmonary tuberculosis presents peculiar difficulties when one comes to arrange and classify its appearances. This difficulty is due partly to the anatomical structure of the

organ—the lung, partly to the variability in individual susceptibility to the disease, partly to varying virulence in the strains of the causal organism. Owing to the close proximity of large and small air-passages, lung alveoli, and blood-vessels, the spread of a slowly progressive disease is a complicated matter. Owing to variety of path of entrance and to the above-mentioned anatomical complexity the point of origin of the disease is seldom an easy problem for determination. And owing to variation in resisting powers both in different individuals and in different parts of the same lung; owing, too, to the variability in virulence of the tubercle bacillus, the appearances observed in pulmonary tuberculosis present variations and complications of the most marked description.

We have said that in its essence the pathology of the disease is simplicity itself. This statement requires perhaps some support. The tubercle bacillus like most other germs is an irritant to the tissues in which it finds rest. It therefore calls forth an inflammatory reaction characterised, as in the case of all inflammatory reactions, by leucocytic aggregation, fluid exudation, and a response on the part of the fixed tissue cells of the part manifested in cell multiplication and aggregation. It is a germ which multiplies slowly, hence the changes which it produces are characterised more by chronicity than acuteness. Hence connective tissue changes tend to predominate over exudative. It is a germ with a resistant envelope, hence it is difficult to destroy and may remain latent in its activities. It contains a poison which, when diffused through a cellular area, causes a peculiar form of cell death known as caseation. Owing probably to a combination of all these characters the peculiar cell aggregation known as “the tubercle,” with its giant cell, epithelioid cells, and lymphocytes, is to be explained. The changes produced by it in the lung vary in character according as the organism is deposited in the interalveolar or peri-bronchial connective tissue or within the alveolus itself; the organism is freer to grow and exudation is not limited to the same extent in the latter event, but the change is in essence the same. When the change commences in the interalveolar connective tissue the result is a so-called miliary tubercle; when the alveolus is invaded caseous pneumonia results. But a miliary tubercle may invade an alveolus, and the one process pass into the other. There is no hard and fast line.

The elastic network of the lung is affected differently under different conditions. In the chronic tubercle where formative changes predominate over destructive the elastic fibres are pushed

aside by the swelling nodule. Destruction occurs, but it is by pressure not by solution. In the acute tubercle partial destruction and solution of the elastic fibres takes place in the centre of the area where leucocyte and bacillus encounter one another. As the tuberculous area enlarges and includes more alveoli the area of destruction is no longer central, but forms a zone representing the line where cells are breaking down under the action of the bacillus. Much of the elastic scaffolding escapes, and is preserved in the caseous area almost indefinitely. When, however, cavitation occurs this elastic network is destroyed, and comes away with the caseous material.

The spread of tuberculous disease occurs by continuity of tissue, by passage along the lymph channels, by invasion of larger air-passages, and the inhalation of infective material to be deposited in other parts, and, lastly, by the invasion of blood-vessels by which emboli are carried to smaller vessels, where when caught they set up the disease process again.

But in spite of this essential simplicity in nature tuberculous disease, for reasons already stated, is most complicated and classification is correspondingly difficult. In attempting to classify all the various manifestations of the disease one may adopt several methods. One may adopt the method of arranging according to the path of entrance of the virus, whether by means of air-passages, blood-vessels or lymphatics, thus bronchogenic, hæmogenic or lymphogenic. But here certain difficulties at once present themselves. In the first place it is seldom possible to speak dogmatically as to the exact path of entrance and point of incidence of the disease. In the second place, and as a result of the first, authorities differ greatly as to the weight to be attached to the evidence. For example, Calmette regards bronchogenic tubercle as rare, if not non-existent. According to him infection of the lungs is almost always metastatic by way of the lymph channels and blood-vessels, the primary focus being the intestinal canal. On the other hand, Orth still holds the older view that a majority of cases are due to aerial infection of the air-passages. Ribbert appears to hold a similar view, but according to him the inhaled bacilli are first absorbed and carried to the bronchial glands, which become the seat of a tuberculous process, and only secondarily is the lung infected by the spread outwards from these foci. Aufrecht, on the other hand, considers that the primary portal is the tonsil, and that from it the chain of cervical lymph glands become infected, from these the bronchial, from these again caseous material passes into the large

branches of the pulmonary artery to be carried to the terminal branches of the system, thus acting as infective emboli and setting up disease partly by cutting off nutrition from the area supplied, partly by directly infecting the area.

Thus it would appear that although in individual instances the path of infection may be stated with confidence it is impossible to found any system of classification upon it. One distinct and well-defined variety of tuberculous disease—the so-called miliary tuber-

FIG. 1.



FIG. 2.



culosis—may be defined by this means, but any complete classification is impossible.

Another system upon which a classification might be founded is the distribution of the disease, whether generalised or localised, whether disseminated throughout the whole lung or restricted to certain areas and spreading from these. This method offers decidedly more promise as there can be no great difference of opinion upon the question which serves as a criterion for classification. Also there can be no doubt that by this means the two chief varieties of the disease would be marked off from one another. The first variety—

the disseminated—would correspond to what is more commonly known as miliary tuberculosis: to the second variety no inclusive term can be given at present. In certain instances it would be difficult to decide whether the case came under the one or the other category, but these would be the exception certainly in the adult. On the whole, however, this system, with properly-defined limits, appears to the author the most reasonable. By localised the author does not mean merely restricted to one lung or a part of a lung, but a condition where the indications support the view that the disease started in one lung or in a part of one lung and spread from that point.

Another system of classification is that founded upon histological appearances. This again would appear to have the advantage of being one where there is little room for difference of opinion. Thus one would divide pulmonary tuberculosis primarily into interstitial tuberculosis and caseous broncho-pneumonia. The former, including conditions where tubercle granulations were scattered throughout the lung in the interalveolar septa; the latter indicating the existence of a process of exudation with consolidation and subsequent caseation, the whole being lobular, *i.e.* occupying a small bronchus with its surrounding and connecting pulmonary alveoli, in its distribution. A third category would have to be made to include cases in which there was a breaking-down of the caseous material with formation of cavities.

Now at first sight it might appear that this system of classification would leave little room for difference of opinion. This, however, is not the case. In the first place the term miliary tubercle is one about which different authorities hold different ideas. As originally used by Laennec the term, as its derivation indicates, was applied to nodules of a fair size, a usual diameter for a millet seed being 2—3 millimetres. Later on the term came to be applied to all disseminated nodules. When these nodules were submitted to microscopic investigation by Virchow he found that they divided themselves into two distinct varieties, viz. those where the nodules were interalveolar in position, and those where they consisted of a number of consolidated alveoli and air-passages. He used the term granulation to indicate the former, and he applied the term miliary tuberculosis to the condition as a whole, for the latter he introduced the term, caseous hepatisation. After the discovery of the tubercle bacillus it was shown that the same etiological factor was present in each case, and Lebert pointed out that the two processes are in their essence the same. Von Behring has suggested,

recently, that the more minute submiliary areas should be called granulations and that the term miliary tubercle should be restricted to disseminated caseous tubercle. Letulle similarly distinguishes between miliary granulations and peri-bronchial tuberculous nodules, although under the former term he includes cases of disseminated caseous broncho-pneumonia. Orth, on the other hand, includes both varieties under the term miliary tubercle, calling the smaller nodules

FIG. 4.

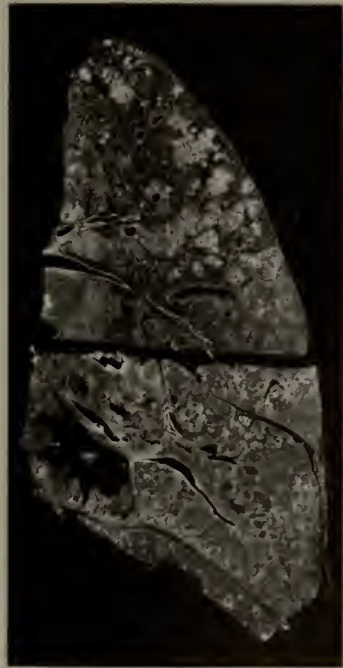


FIG. 3.



submiliary. He suggests that a better and more comprehensive term for the condition would be "disseminated metastatic tuberculosis." There is much to be said for the introduction of such a term, but it would be difficult to displace one so widely used as is miliary tuberculosis.

Another point upon which there is difference of opinion is whether a hard and fast line can be drawn between the interstitial on the one hand, and the intra-alveolar on the other. Orth, following Virchow, considers that the two processes are really different—that the former is a formative, the latter an exudative

process. Baumgarten, on the other hand, regards the two processes as essentially the same; whether the condition is chiefly interstitial or chiefly exudative depends upon the position of the causal germ, and upon the chronicity or acuteness of the process. Upon this question, which, after all, is only one of terms, a long polemic has been carried on for some years between the two authorities.

To sum up the matter—there are objections to all the methods of classification mentioned; none are entirely satisfactory. The only method left is to adopt a compromise between them. The author suggests the following as the simplest method of classification, and one which includes all types of the disease.

- I. Disseminated metastatic tuberculosis (miliary tuberculosis).
- II. Caseous broncho-pneumonia, or merely caseous pneumonia.
- III. Fibro-caseous pneumonia.

Both of the last two conditions may be complicated by the presence of cavities. Thus one would speak of caseous pneumonia, or fibro-caseous pneumonia, with cavity formation. The term caseous is so intimately associated with tuberculosis, and so characteristic of the disease, that the use of the term is sufficient to indicate the nature of the disease process.

The first category includes all cases where there are discrete tuberculous areas scattered through the lung. It might be suggested that the term disseminated tuberculosis would be sufficiently descriptive of the condition. The word metastatic is, however, necessary to indicate that there has been a primary focus from which the nodules have taken origin. Under this heading the author includes all cases of the kind mentioned, however large the nodule may be. Thus the nodules in Fig. 2 are much larger than in Fig. 6, but both are included as cases of disseminated metastatic tubercle, because not only are the tuberculous areas scattered uniformly throughout the two lungs, but tubercle nodules were found in such organs as liver and spleen. This raises a point which perhaps requires explanation. The author, while recommending the use of the term disseminated metastatic tubercle for the condition in the lungs, does not intend that the name should be used for the disease as a whole where tubercle nodules are scattered throughout the organs of the body generally. The term miliary tuberculosis is much too intimately associated with that condition to afford the least hope that a more reasonable term could be substituted.

It was long ago pointed out by Orth (1885), and it has been more recently re-stated by Ribbert, that the size of the nodules in a case of disseminated metastatic tuberculosis differs in the different parts

of the lung. Not only are nodules to be observed side by side, varying greatly in size, but on an average it will be found that the nodules in the upper lobe are larger than those in the lower. This statement has been denied by von Hansemann from an examination of a series of cases. In the author's experience this is to be observed in certain instances, but it is certainly not a universal rule. For example, in Fig. 3 there is a decided difference in size between the nodules of the upper and those of the lower lobe, the former being

FIG. 5.

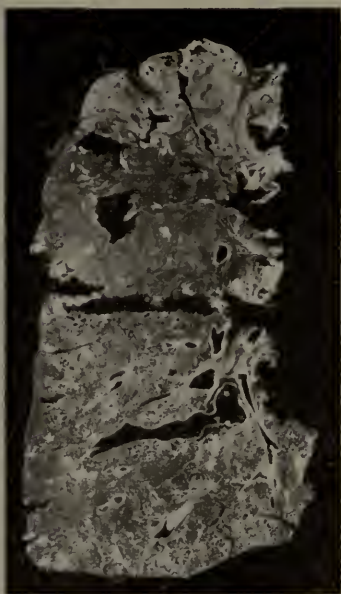


FIG. 6.



the larger; but in Figs. 2 and 6 such a difference is not obvious. Orth and Ribbert agree in concluding that this variation in size is due to a greater susceptibility in the apical portion of the lung to the tubercle virus, so that the disease progresses more rapidly, because, not only are the apical tubercles larger, but, according to Orth, these show more evidence of rapid growth—there being a greater amount of caseous pneumonia surrounding them. That there is a greater tendency to the deposition of tuberculous disease in the apical portion of the lungs there can be no doubt. The reason for this has been variously explained. Rindfleisch originally suggested

that the explanation was to be found in the relative poverty in blood of the apical portion of the lung, largely owing to the action of gravity upon the blood. The lesser amount of movement in the upper portion of the lung has also been suggested as a contributory cause. Now, while the above statement holds good as a general rule for adults, it is by no means so undoubted in the case of young children. There is apparently not the same tendency for the disease to restrict itself to the apices, or to make greater strides in the apical portion. The author has seen several examples in young children where the more advanced disease was certainly in the lower lobe (Fig. 4). Orth as a result of experimentation on animals, in which he produced typical phthisis, but without the tendency to apical deposition, considers that the erect attitude acting upon the blood-supply has much to do with the distribution of the disease and the relative susceptibility of the various parts of the lung. The author's observation of the same condition in very young children may be capable of a similar explanation.

But not only does one observe variation in the size of the nodules in different parts of the lung, but side by side one may see nodules varying greatly in size. This suggests that the smaller ones are more recent, that in fact the nodules are not all of the same age. It would indeed be difficult to account for the fact, if it were one, that all the nodules in a case of miliary tuberculosis are of the same age. These nodules may amount to many thousands, even millions, in a given case. It seems quite impossible that such a large number of germs are set free from the primary focus at one and the same moment. This difficulty presented itself to Ribbert, and he suggested three possible explanations: 1, multiplication of the bacilli in the blood stream itself; 2, repeated infections from the primary focus; 3, multiplication of the infecting foci by the secondary nodules becoming in their turn disseminating foci. The first alternative is probably impossible from the nature of the infecting organism, and as a matter of fact in a later publication Ribbert has given it up as an explanation. The second probably obtains. It is reasonable to suppose that for example a caseous lymph gland which has invaded a blood-vessel or the thoracic duct will not empty itself all at once, but will do so gradually, and so inject bacilli into the blood or lymph stream at successive periods. But undoubtedly the chief factor in the multiplication of miliary tubercles is the third.

In cases of rapidly spreading disseminated metastatic tuberculosis where the caseous change is in excess of the formative, one

does not require to search far before one comes to evidence of invasion of the caseous process through the wall of blood-vessels. This is particularly to be observed in the cases of rootlets of the pulmonary veins owing to the relative thinness of their walls. This process is well seen in Fig. 10.

The importance of this invasion is obvious. So long as the inflammatory process is merely formative in character the result is

FIG. 8.

FIG. 7.



merely partial or total occlusion of the vessel lumen by granulation tissue, but when the change is more acute and caseation occurs *pari passu* with the cell accumulation the presence of such material within the vessel lumen means blood infection, and one has been able to demonstrate frequently the presence of bacilli in the caseous material inside the vessel wall. By means of this process of implication of vessels the number of infecting foci is multiplied many times, and there is no difficulty in accounting for the numerous areas in lung and other organs, and the presence of areas apparently of very various age. Branches of the pulmonary artery are

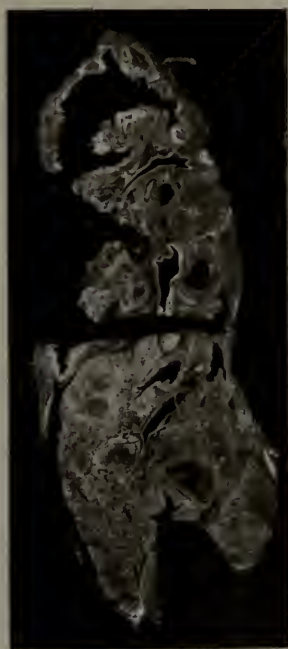
invaded as well as veins. In this way the further infection of the lung is more direct, portions of the caseous material being carried to the alveolar capillaries, and setting up new foci where they come to rest. The infection of large branches of the pulmonary artery in the way described by Aufrecht and Goerdeler the author has not observed. It is difficult to imagine the extremely thick layers of elastic tissue of the larger branches being invaded in this way by means of caseous lymph glands.

With regard to the site of the primary lesion in these cases of metastatic tuberculosis Weigert long ago emphasised the importance of the invasion of the thoracic duct by a caseous retro-peritoneal gland. Ribbert has found this method of infection to obtain in a number of cases. In the author's experience this mode of infection does not occur in any large proportion of cases. He has been able to demonstrate it in at least two, but in a large number such infection cannot be shown to exist. When one observes, however, the way in which small vein rootlets are invaded by spreading tuberculous disease in the lung one has little difficulty in understanding how dissemination occurs when even a small area of the lung is affected. Rather one is surprised that such dissemination is not the rule. In the author's experience of the disease in infants evidence of this blood infection is the rule. Practically in all his cases in young children there has been evidence that bacilli have entered the blood and have been deposited in various organs and tissues. In a large proportion of cases there has been evidence in favour of the intestinal origin of the disease, and in one instance of pulmonary tuberculosis with cavitation the author has grown a strain of the tubercle bacillus having characters corresponding to the bovine type.

The next great group of pulmonary tuberculous conditions is the caseous pneumonias, or as they usually are, at any rate in this early stage, caseous broncho-pneumonias. The line which divides this group from the preceding is by no means well marked. Indeed the majority of cases of disseminated metastatic tuberculosis are cases of caseous broncho-pneumonia, either partly or wholly. What places these cases among the first group rather than the second is the fact that the areas of broncho-pneumonia are disseminated throughout both lungs and have undoubtedly arisen from a blood infection. Should the areas in such cases coalesce so as to render their origin from discrete foci no longer obvious as, for example, in Fig. 4, then some term other than disseminated metastatic tubercle should obviously be applied. Should the areas be far apart and

the spread be by involvement of neighbouring areas of lung, as in Fig. 8, then equally some other term seems warranted. The method of spread in these cases is more by continuity of tissue, although the lymphatics bear a part and invasion of blood-vessels is just as likely to occur as in the disseminated type so that a localised caseous broncho-pneumonia may become a disseminated metastatic. This is the type of disease seen in the early acute phthisis of the adult, but anything exactly corresponding to the latter condition the author

FIG. 9.



has not observed in young children. He has never seen tuberculous disease limited to the lung in the infant such as one so often observes in the adult. There are always other foci in distant parts and the general rule is to find that the disease is disseminated, in other words that there has been a blood infection. This is not surprising when we consider that when the area of caseation is large enough to involve several alveoli there are almost certainly small rootlets of the pulmonary vein also implicated. The reason why this blood infection does not occur so frequently in the adult is probably because the condition is seldom so acute as in the child ;

blood-vessels are therefore obliterated by the inflammatory change which spreads in advance of the caseous. While in the child in cases of caseous broncho-pneumonia, whether disseminated or localised, tubercle bacilli are usually present in enormous numbers, in the adult they are seldom found in any quantity.

As previously stated it is in such conditions of caseous pneumonia that the destruction of elastic tissue is greatest. The destruction occurring at the spreading margin at the point where the cells are breaking down previous to undergoing the caseous change.

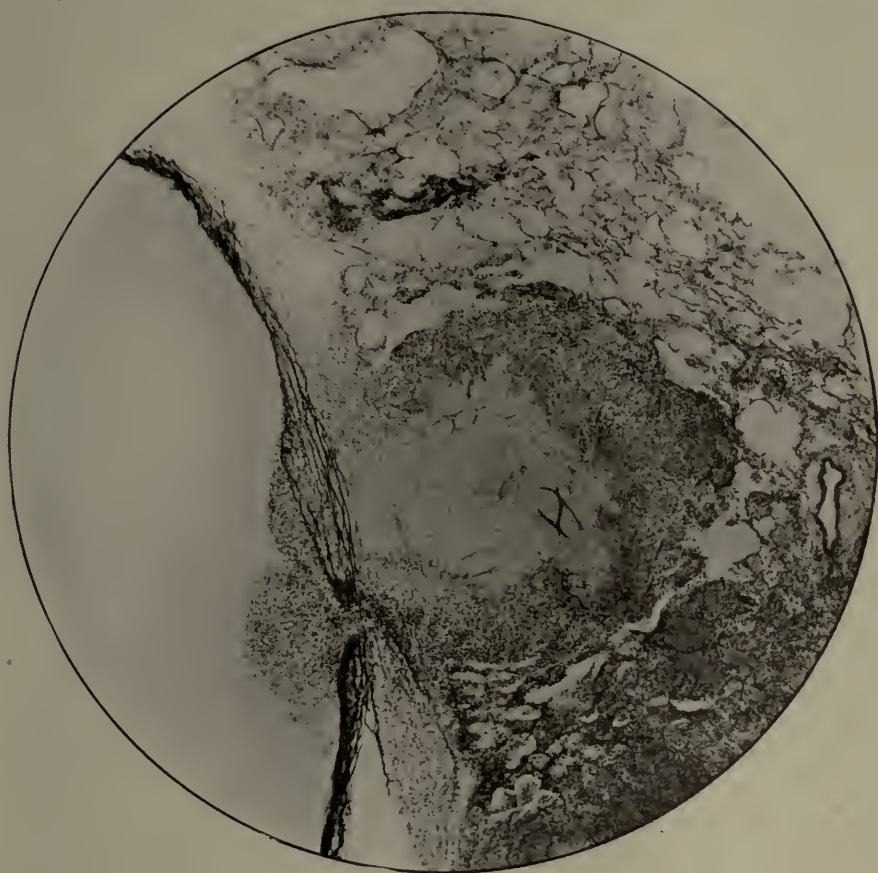
Cavitation is a common accompaniment of this variety of tuberculosis. It is by no means restricted to the apical portion of the lung in infants as already stated. Fig. 4 represents a lung with cavitation in the lower portion of the lower lobe. In more than one case of the kind the author has found such a basal cavity associated with well-marked abdominal tuberculosis. The walls of such cavities are ragged and formed of breaking-down caseous consolidated lung. About the earliest stage in this process of cavitation it is difficult to be dogmatic. In some instances certainly the cavity originates in a dilated bronchus or bronchiole. Dilatation of such air-passages is a most common accompaniment of broncho-pneumonia of all kinds in children; the chief factors in its production being forced expiration acting upon an elastic and muscular wall weakened by inflammatory change. Such potential cavities are seen in Fig. 4 in the upper and lower lobes, and under a greater magnification in Fig. 11. The destruction of the elastic lining will be observed in the latter instance. From such a dilated bronchiole with caseous process around it is no long step to a cavity easily visible to the naked eye, where much pulmonary tissue has been destroyed. In the walls of such cavities tubercle bacilli are not very numerous, as indeed is the case in all completely caseous areas.

The third group of tuberculous conditions of the lung in children are those where formative and destructive processes have proceeded side by side, where there has been interstitial inflammation with fibrosis, and parenchymatous inflammation with consolidation and subsequent caseation. This is the commonest condition found in phthisis of the adult, but it is rare in the infant, although by no means unknown. Four well marked cases have come under the author's notice, two of which are reproduced.

In these cases there is a marked increase of fibrous tissue between the lobules and around bronchi and vessels. This granulation tissue presses aside the lung tissue proper, so that the elastic network is found in bunches scattered here and there, all that remains of

alveoli and air passages. Cavitation is usually present, in fact was present in all four cases. In two practically the whole of the upper lobe of one lung consisted of a cavity, limited on the one side by thickened pleura, on the other by the stumps of obliterated bronchi and vessels. In one of these cases, in a child aged $1\frac{1}{2}$ years,

FIG. 10.



tubercle was not diagnosed during life, the case being considered as one of empyema. The upper part of the right lung (Fig. 7) was one large cavity, the lower part of the lung was completely consolidated; the other (left) lung (Fig. 8) showed irregularly distributed caseous broncho-pneumonia. The bronchial glands on the right side were enlarged and caseous. There was a tuberculous tumour on the upper

surface of the cerebellum on the right side. The spleen showed miliary tubercle, and the mesenteric glands were enlarged and caseous. In such a case, although the condition in the right lung is by far the most advanced, it is impossible to be certain that it was the first site of the disease. There is generalised tuberculosis, and some of the lesions in other organs are of some standing. As already stated, in the author's experience tuberculosis restricted to one or other or both lungs does not occur in the child. It would seem that when infection once occurs dissemination takes place rapidly, and advanced disease in one organ is probably more an indication of lower resistance or greater susceptibility than of that organ being the primary seat of the disease. Practically all the cases which have come under the author's notice of tuberculosis in very young children (under 5) have shown either actual intestinal ulceration or enlarged and caseous mesenteric glands. This indicates, in the author's opinion, that the path of infection has been intestinal.

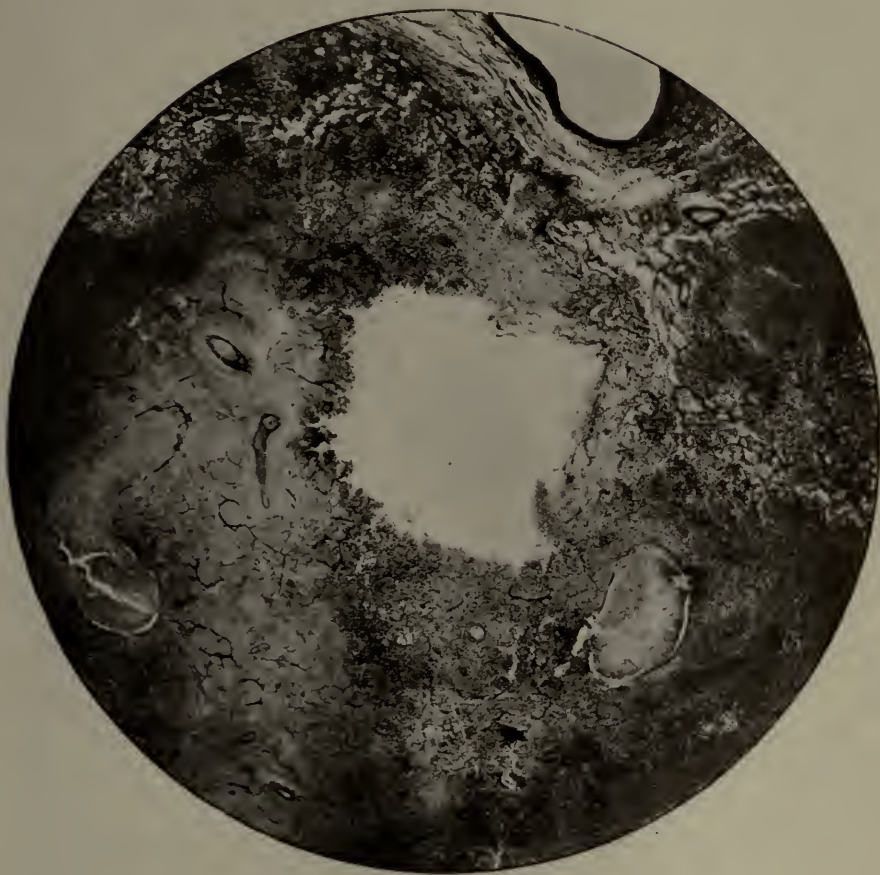
Another case of fibro-caseous pneumonia occurred in a child 1 year old. The right lung showed disseminated metastatic tuberculosis (Fig. 6). The left (Fig. 5) showed fibro-caseous tubercle with cavitation in the upper lobe, and disseminated tubercle in the lower. The bronchial glands on the right side were enlarged and caseous, the mesenteric glands were similarly affected, and there were two tuberculous ulcers in the intestine, one in the ileum, another in the caecum. There was no miliary tubercle of liver or spleen. In this case also, although the left lung showed the most extensive disease, there was evidence of blood infection in the other lung, and there was advanced disease in the intestinal tract.

In a third case, in a child aged 4 years, there were numerous enlarged tuberculous glands in mediastinum and neck. The right lung showed disseminated metastatic tubercle, the nodules being of small size, also a large caseous nodule in lower border of lower lobe posteriorly. The left lung showed disseminated tubercle of the upper lobe and almost complete consolidation of the lower lobe, which was the seat of a fibro-caseous process with a large cavity in its lower part opened into on removing the organ. The bronchial glands on both sides were markedly enlarged and tuberculous. The small intestine showed well-marked tuberculous ulceration of the portion immediately above the ileo-caecal valve. The mesenteric glands were enlarged and tuberculous. There was miliary tubercle of liver and spleen, and a chronic basal meningitis with hydrocephalus. The most interesting points about this case are the advanced disease both in lungs and bowel, and the presence of

fibro-caseous tuberculosis with cavitation in the lower lobe of the left lung.

For another case of advanced pulmonary tuberculosis the author is indebted to Dr. Douglas Stanley. Fig. 9 shows a section of the left lung; the upper lobe is the seat of a large cavity, the small

FIG. 11.



margin of pulmonary tissue around showing fibro-caseous pneumonia; the lower portion of the lung shows irregularly distributed caseous broncho-pneumonia.

In these cases of advanced tuberculosis it is only by studying sections stained by the elastic tissue method that one can properly understand and follow the disease. Areas which, when stained by ordinary methods would appear almost structureless, are found to

contain obliterated vessels and bronchi. The cavities in these cases are lined, not by caseous lung, but by a layer of granulation tissue, which protects the lung proper and limits the process.

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CONGENITAL HERNIA.

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IN discussing a case of congenital hernia it is worth while noting a few differences in the anatomy of that region in the child compared with that of the adult. The position of the external abdominal ring corresponds in the infant to the "fold of Venus." In young adult life it is some fingers' breadth beneath this fold, and so it slowly descends until it occupies the position associated with adult life.

In infancy also it must be remembered that the internal abdominal ring is in close proximity to the external ring, and that practically the inguinal canal has no length.

The distance between the internal and external ring and the inguinal canal increases with the widening of the pelvis until the normal adult proportions are reached.

In the Children's Hospital, Temple Street, Dublin, I recently met with a case of congenital hernia on the left side in a boy, aged 4 years, which was of considerable interest.

The child was in hospital a few days before the operation. The hernia was a large one and never disappeared into the abdomen. It could not be entirely reduced by taxis. Attempts at reduction seemed to pain the child. Moreover, the nurse in charge said that the child would sometimes cry as if in pain. Beyond the fact that the child was in need of circumcision there was nothing else worth noting about the case. The history was indefinite.

An incision was made in the usual line for inguinal hernia in children. The sac was opened and an attempt made to return the contents to the abdominal cavity. This proved difficult, and it was then discovered that the appendix was adherent to the left testicle, an unusual condition which explained the symptoms before operation.

The free end of the appendix was also adherent to the cæcum. The latter, it should be mentioned, was also in the sac.

The adhesions were ligatured and cut. The appendix was removed as it was thought that the adhesions were probably due to inflammation in it, and the contents of the sac returned to the abdomen.

The internal ring was extremely large, and three sutures were employed to close the conjoint tendon to Poupart's ligament. The boy was then circumcised. Both wounds healed by first intention and the operation was successful.

It is, I think, unusual to find the appendix adherent to the left testis. No doubt the cæcum and appendix are often found in the hernial sacs on the right side. It is common in children, but the condition I have endeavoured to describe is, I believe, somewhat remarkable. Had an acute attack of appendicitis occurred in this case the diagnosis would have been a matter of some difficulty.

The accurate explanation of the condition is not quite simple. The occurrence of adhesions would point to the probability of a slight attack of appendicitis, and also that the appendix had been in the sac for some time.

The appendix was of the usual length. The internal ring was very deficient, and I would suggest the possibility that the ascending colon was provided with a mesentery, which occurs in a limited number of cases.

These cases in which the ascending colon is entirely surrounded by peritoneum and provided with a mesentery are not frequent, and the extent of movement is limited.

Editorials.

INSPECTION OF ELEMENTARY SCHOOL CHILDREN AND THE SECTION FOR THE STUDY OF DISEASE IN CHILDREN OF THE ROYAL SOCIETY OF MEDICINE.

THE Board of Education, in their recently issued report for the year 1907-1908, make the following statements in regard to the medical inspection of elementary school children: "The Board's first memorandum on this subject was followed in February, 1908, by a model schedule indicating the ground which should be covered by the medical inspection of school children, and an explanatory memorandum (Circular 582)." "The schedule was purposely made comprehensive, and its apparently detailed character is not inconsistent with the statement in the memorandum that the inspection of a child should not, *on the average*, take more than a few minutes." "The experience of those local education authorities who have made substantial progress with the work has confirmed the Board's opinion in this respect."

Why the Board should so harp on the time occupied in inspection is not clear, unless it be to impress upon local education authorities that the services the doctors render are of so trifling a character that the scale of fees need only be fixed in proportion to the Board's utterances on this matter. But this inspection is not so simple an affair as the Board would fain make these local authorities, which control the public purse, believe, if their model schedule with its twenty-seven reference numbers is to be taken seriously. The medical inspector will quickly be undeceived as to the time which will be occupied in these inspections if he adheres to their instructions as confirmed by the above report.

But the Board of Education have missed a vital point in their memorandum. Stress should not be laid upon the time to be occupied in these inspections but rather on *the way the work should be done*. This latter is *most* important in the interests of the children.

We have given the Board's own view of the worth of their *magnum opus*, but unfortunately their appraisal of its value is not in harmony with those best qualified to judge in such highly technical matters.

The Section for the Study of Disease in Children of the Royal Society of Medicine, at a largely attended meeting at 20, Hanover Square, on May the 28th last, unanimously passed the following resolution: That in the opinion of the Section "it is desirable that the Board of Education should issue forthwith a complete set of forms for use in the medical inspection of elementary school children in accordance with Circular 582, issued by the Board on January the 23rd, 1908, and should issue definite instructions to medical officers as to the manner in which the medical inspection should be carried out."

Reading between the lines the Section for the Study of Disease in Children of the Royal Society of Medicine do not altogether approve of this model schedule issued by the Board of Education, and they are not in accord with the Board of Education's instructions to local education authorities in their Circular 582 as to the manner in which medical inspection should be carried out.

This is a very serious indictment indeed, coming, as it does, from so learned an authority, and is a matter which appears to require the Board of Education's immediate attention.

It is evident, therefore, that the Board of Education have no occasion for self-congratulation, which is the keynote of their report to which attention has been drawn; on the contrary, they have caused a considerable amount of dissatisfaction throughout the country by their pusillanimous attitude and two-way-facing directions. The Board of Education would be well advised to cease writing their own panegyrics, which are so transparent that they would not deceive a child. No amount of puffs in relation to their "Schedule of Medical Inspection" and "Notes for Inspecting Officer" in association with Circular 582 to local education authorities will reconcile the conflicting statements therein laid down—like oil and water they cannot, and will not, mix.

The Board of Education should make good their promise contained in Circular 582, and comply with this very reasonable and timely mandate. Emanating, as it does, from an authority which comprises the leading children's specialists in the land its opinion commands the highest respect and the closest attention.

Parliament has conferred power upon the Board of Education—

a corporation of laymen—to take in hand the medical inspection of elementary school children.

Judging by the contradictory literature which they have contributed on this important subject, and by the policy they have adopted of not supporting medical inspectors who have simply carried out their instructions, this mandate has appeared none too soon.

THE MEDICAL TREATMENT OF SCHOOL CHILDREN.

THE act which provided for the medical inspection of school children came into operation on January the 1st, 1908, and in consequence the school children all over the country have been examined and many reports issued of the defects which have been found. Although the large amount of facts which have been obtained as the result of this inspection are very valuable as indicating the health of the rising generation, yet the work that has been performed will remain almost worthless unless some means be provided whereby those children who are found to be defective shall receive adequate treatment to remove or relieve the physical defects, and to cure or alleviate any diseases from which they may be suffering. The first step in order that treatment may follow will naturally be the notification of the defects or diseases to the parents. This alone must have a beneficial effect in increasing the general health of the children, because by it the parents will be educated to take more interest and care in the soundness and cleanliness of their children's bodies. Many parents fail to realise that their children are not healthy unless it be pointed out to them, and this is partly due to their ignorance, partly to their lack of observation, and in some cases, unfortunately, due to gross carelessness and even neglect. Many of the conditions which cause ill-health in children can be removed by simple instructions to the parents. Children suffering from uncleanness and from certain of the parasitic diseases of the skin and scalp do not require to be specially treated by a medical practitioner, and all that is necessary ought to be performed at home by the parents when they receive the report of the medical inspector. An arrangement might be made whereby school nurses should visit

the children in their homes to see that the instructions are followed out.

The chief defects which are found on the examination of the children are defects of eyesight, carious teeth, and enlarged tonsils and adenoids. These and the other less common, though important affections, require special treatment, and such treatment must naturally and logically follow inspection in order that the greatest good may accrue. The community has instituted the inspection, and it can hardly draw back now after having shown up the defects that exist without making some provision for their amelioration.

In a certain number of instances the parents are able themselves to provide for the necessary treatment of their children, but these cases are only a small proportion. It should be the duty of the Education Department to make sure that those parents who are able to pay for medical treatment do not shirk this obligation. The great majority of the parents, however, cannot afford the expense of providing medical treatment, and the difficult problem arises as to what is the most satisfactory manner to deal with such cases. In large towns where there are one or two general hospitals, a children's hospital, and also several special hospitals, an increase of a few thousands in the number of out-patients distributed equally between them ought not to increase materially the work at each hospital, but in order that all the cases should not be sent directly to the hospitals we consider that the proper way would be for the children to be first referred to their own medical practitioners, and that it should be left to them to decide whether they were suitable cases for hospital treatment or not. This would mean that no child would be treated at a hospital without a note from the medical practitioner, and would ensure that the medical practitioner was not cheated out of any patients who ought to come under his care. This plan would entail a little more public expense, for it would only be fair for the Education Department to contribute towards the maintenance of the hospitals. If, on the other hand, it was found that there was a great increase in the hospital work, and in consequence in the hospital expenditure, then, perhaps, a better plan would be for the Education Department to instruct the parents to take the children to a medical practitioner, who would receive the fee for the treatment

of each child on a fixed scale from the Education Department. This would mean a considerable increase of public expense, but the good results which would follow the better health of the children, in that they would grow up to be stronger and more useful citizens, and therefore less likely later in life to come upon the public expense for their maintenance, would without doubt more than compensate for the initial outlay to preserve their health in childhood. In the country districts the payment of fees on a fixed scale to the medical practitioners of the neighbourhood for the treatment of the children would seem to be the most satisfactory plan to adopt.

We do not think that the treatment of the children should be undertaken by the medical inspectors of the school, nor by any officers especially appointed for that purpose. The establishment of school clinics would be a plan which we would deplore, for it would mean that there would be an increased number of medical men in the large towns who would consider themselves specialists in the diseases of children, and as a result a new class of consultants in this branch of medicine would spring up. There are so many consulting physicians and surgeons at the present time that it would be folly to add to their list the members of the staffs of school clinics. We think, therefore, that the present medical assistance which can be obtained is adequate to cope with the increased amount of work which is necessary, in order that the defects and diseases revealed by the inspection of school children may receive proper treatment.

The Royal Society of Medicine.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

Friday, April the 23rd, 1909.

Mr. R. CLEMENT LUCAS *in the Chair.*

A Case of Cystic Hygromata in a girl, aged 15 months, under the right arm, on the right elbow and over the right scapula was shown by **Mr. HUGH LETT**. The mass in the axilla was soft, with irregular nodular areas. The skin attached to it was adherent and dimpled. There were no dilated veins or pulsation.

Multiple Masses under the Skin of the Thigh was also shown by Mr. HUGH LETT. The patient was a girl, aged 6 months. The swellings had been noticed since birth. On seeing the case three weeks ago the appearances had suggested lipomata, but one of the masses had now become softened and discoloured and showed ulceration. The condition was, therefore, one of multiple tuberculous abscesses.

A Tumour of the Femur in a boy, aged 15 years, was also shown by Mr. HUGH LETT. He had noticed a lump in the right thigh four years ago, which had been growing slowly since. It caused the patient a little pain when the weather was damp. The urine contained a trace of albumin.

A Case of Multiple Osteomata in a boy, aged $4\frac{1}{2}$ years, was also shown by Mr. HUGH LETT. He appeared to be normal until the age of eighteen months, when his mother noticed lumps on his legs. Osteomata could be seen or felt at the ends of both tibiae and humeri, at the adductor tubercles of the femora, on the vertebral borders and spines of the scapulae, at the outer end of the right clavicle, on the ribs at the junctions of the cartilages and bone, and there were symmetrical nodes on the skull. The boy was well except that he got tired very quickly. The tumours were roughly symmetrical.

The CHAIRMAN said he had but little doubt that the three small swellings in Case 2 were tuberculous skin abscesses. The fact that one had become discoloured since Mr. Lett saw it three weeks ago indicated the probable contents of the others, namely sweet white pus. With regard to the tumour on the thigh, he thought that it was an ossifying enchondroma, usually known as an exostosis. The photograph showed that the bony part was growing, and as it was single he would be inclined to remove it.

A Specimen from a Case of Congenital Stenosis of the Rectum, Colon, and part of the Ileum was shown by Mr. R. WARREN. The baby was three days old and had passed no motion since birth. The finger could be passed one to two inches into the rectum, and a small tube of 5 mm. bore would pass three inches or more. A little gas came away, but no meconium. An enterostomy was performed, but the child died. Post-mortem the gut was stenosed, but not blocked. Water could be passed both ways with a syringe.

A Case of Patent Ductus Arteriosus without Murmur was shown by Dr. PARKES WEBER. The child came under observation aged 2 weeks, suffering from debility and cyanosis of variable degree. It could not take the breast properly. There was no murmur, and no certain signs of valvular disease could be detected. Its temperature was sub-normal and it was subject to respiratory spasms, during which cyanosis was increased. There were $4\frac{1}{2}$ million red corpuscles to the cubic millimetre of blood. The child died at $6\frac{1}{2}$ weeks. The foramen ovale was not completely closed, admitting the passage of a pencil five millimetres in diameter. The ductus measured fifteen millimetres in length, and its channel was about 5 millimetres in diameter, being a little wider at its aortic end; the aorta was very slightly constricted where joined by the ductus. The lungs showed atelectatic patches in the upper lobes. The liver was slightly enlarged.

Dr. CAUTLEY asked Dr. Weber whether he ascribed the cyanosis to the patent ductus or to the condition of the lungs. He thought himself that it

was not due to patent ductus, because if there were mixing of the bloods there would be an excessive number of red cells, which was not the case.

Dr. WEBER thought that the atelectatic patches had a share in producing the clinical condition.

A Case of Extreme Deformity of the Chest with Fibrosis of the Left Lung was shown by Dr. A. J. JEX-BLAKE. The patient had always been weakly. There was a history of consumption on the father's side of the family. At the age of seven the patient had bronchitis and pneumonia, and three months later was admitted into hospital with an abscess over the left lower rib which was found to communicate with the pleura. Two operations were done to let out pus. Three months later the whole left chest was flattened and dull, with tubular breath-sounds. The fingers showed clubbing. There was a copious discharge from the tube and from a sinus close to the sternum. Two operations had been done subsequently. He had had a chronic discharge on and off from one or other of the sinuses in the chest ever since. The patient showed extreme deformity and collapse of the left chest, causing scoliosis and much limitation of the movements of the spine. The heart was displaced, the right lung emphysematous, and the fingers cyanosed and clubbed. Dr. Jex-Blake asked whether it was now too late to institute expansion of the lung, as there had been none for four and a half years. Were breathing exercises or an operation, such as decapsulation of the lung, likely to do good?

Dr. E. I. SPRIGGS asked whether the child was bringing up sputum? If there was evidence of considerable dilatation of the tube, he doubted whether respiratory exercises would be of much value. If not, he thought that although they would not cure the deformity they would prevent it becoming still more accentuated as the child grew older.

The CHAIRMAN thought that anything which might bring about amelioration should be tried.

Mr. R. WARREN said he had seen a similar case, though less severe, improved by deep breathing with raising of the arms so as to enlarge the chest. The chest had expanded one or two inches, and the scoliosis was improved. He thought it worth trying in the present case.

Dr. JEX-BLAKE replied that the child suffered from bronchitis on admission, but at the present time was not bringing up any sputum. There was no family history of syphilis. The mother had eight living children; a ninth had died in infancy, but there were no miscarriages.

A Case of Congenital Dilatation of the Colon was shown by Dr. GEORGE CARPENTER. The child was a female infant, aged 1 month. Diarrhoea and vomiting began in the first week, and ceased on March the 28th. The bowels were then not opened until admitted into hospital on April the 2nd. The abdomen was then enormously distended. *Per rectum* by bimanual palpation thickening of the bowel could be felt, and offensive fluid fæces of fairly normal colour followed the withdrawal of the finger. Three days later, after treatment with enemata and aperients, normal motions were passed and the distension had disappeared. It then began to increase again, but was relieved by a turpentine enema. An X-ray photograph was shown, in which the colon, which had been injected with a solution of starch and bismuth, was obviously dilated, forming a U-shaped tube with the base of the U at the splenic flexure, the ascending and transverse colon forming one leg of the U

and the remainder the other. He invited the surgeons to pass an opinion as to whether an operation was advisable.

Dr. E. I. SPRIGGS thought that if the diagnosis was to rest on the skiagram shown it was on an insecure basis, especially when it was remembered that a solution of starch and bismuth had been injected into the colon under a constant pressure, and that unless the plate was pressed down on the colon there would be a considerable spreading of shadow. The darkness on the right side of the U was also contributed to by the liver.

Dr. CAUTLEY supported Dr. Spriggs. He thought that a child with congenital dilatation of the colon ought to have a larger abdomen than the present child seemed to have. There might have been a temporary attack of dilatation from some acute intestinal dyspepsia, which had now passed off. He did not understand why the case was spoken of as congenital, because even if there was dilatation, according to Dr. George Carpenter the child was normally healthy until it got its attack of abdominal distension. And if a solution of bismuth and starch were injected into a child's colon it would easily become dilated.

Mr. LOCKHART MUMMERY said the diagnosis could be cleared up by the use of the sigmoidoscope.

Dr. GEORGE CARPENTER, in reply, said there was no doubt in his mind as to the nature of the case. The colon was dilated and thickened, and he based that opinion on rectal and bimanual examination and on abdominal examination after the methods described by him. These examinations supported the X-ray picture of the condition. He did not pin his faith on the X-ray examination solely: his methods of physical examination were quite sufficient to convince him apart from any such aids as X-rays and bismuth impregnated rectal enemata. There could be no doubt about the thickening of the abdominal contents; that admitted of no mistake, although the inference might be incorrect. The thickening was not peritoneal, he felt certain about that. He had once encountered such a sensation as that now experienced in the case of a mesenteric cyst, but in that case the anatomical situation was quite different. He would like to be favoured with an alternative diagnosis. He would be glad to afford Mr. Mummery an opportunity of using the sigmoidoscope in the case, but it must be realised that the pelvic outlet in infants was very small.

A Specimen from a Case of Steeple Skull, exhibited to the Section in December last, was shown by Dr. GEORGE CARPENTER. The child was at that time five weeks old, and died some little time after its exhibition. The specimen was the skull bisected in the median line, and showed what appeared to be a well-developed though crumpled-up brain. The brain had accommodated itself to the shape of the skull, its front and back had approximated, and its vertex was arched up so that the frontal lobe was brought to within about one inch of the occipital lobe, the pons and crura alone intervening. There was a clot of blood surrounding and compressing the cervical cord, which appeared to be the immediate cause of death.

The CHAIRMAN commented on the rarity of the condition, and said he believed there was no specimen of the kind in the College of Surgeons Museum.

Dr. CAUTLEY suggested that the specimen should be referred to an anatomist for report.

Dr. GEORGE CARPENTER replied that he would not enter into a discussion of the skull before a full description had been written.

A Case of Solution of Continuity of the Right Clavicle since Birth was shown by Mr. A. R. THOMPSON. The mother had fallen down some two weeks before the birth of the child. No deformity was noticed at birth. The boy showed a right clavicle which had apparently been fractured, the two portions being connected by a false joint and forming an inverted V. Mr. Thompson thought the case was one of fracture, although such cases suggested the possibility of cleido-cranial dysostosis.

Mr. A. H. TUBBY said this condition first came under his notice two or three months ago in a child, aged 10 months. The labour had been a difficult one, the arms being behind the shoulders. On bringing the arms down a distinct crack was heard, and there was found to be a deformity of the clavicle similar to that in Mr. Thompson's case. He operated, and found an ununited fracture with a false joint, and wired the fragments together. He had seen a similar case, in which, despite wiring, no true union took place, and feared that in Mr. Thompson's case there would be no true union, even if the false joint were excised.

Dr. SPRIGGS agreed that there was a fracture of the clavicle and not cleido-cranial dysostosis. In most cases of congenital deformity of the clavicle of which he had seen photographs there was evidence of deficiency of the membrane bones. In a case, for instance, published by the late Mr. Walsham, and in the photographs of Dr. George Carpenter's cases, there was evidence either of an unclosed fontanelle, a globular cranium, a high-arched palate, irregular teeth, or some deformity of the lower part of the sternum. The present case showed none of these. Again, in cleido-cranial dysostosis, although there was usually some irregular deformity of the clavicle on both sides, the fragments might be joined together by a loose joint, in which case the two parts fixed themselves in the same position as in this case. The case was an interesting one historically, because a number of cases of cleido-cranial dysostosis had been recorded as fractures even when the deformity was bilateral. Some anatomists, such as Paterson, of Liverpool, thought that the clavicle might be developed in two parts.

The CHAIRMAN expressed his agreement with those who had spoken. He thought that operation should be undertaken.

A Case of Multiple Exostoses was shown by Dr. E. I. SPRIGGS. The boy came to St. George's Hospital in 1902, aged 5 years, with a painful tumour, in the upper end of the left tibia. At that time he showed several other small exostoses. Five years later, at the age of ten years, he came to the Victoria Hospital, and then showed exostoses of the vertebral border, of both scapulae, and one on the spine, of the right scapula, at the insertion of the pectoralis major in the right humerus, at the lower end of both radii and ulnae, on the left metatarsal, on the femora and tibia, and at the inner and outer ends of each clavicle. At that time he had a good deal of pain and could not dress without assistance. Muscular power was fair. At present—two years later—the bony tumours were definitely less marked. The case was interesting as showing a few tumours at the age of five, more at the age of ten, and a diminution in their relative size since.

A Paper on a Case of Meningitis Associated with the Leptothrix Bacillus was read by Dr. MILLIGAN. A child, aged 4½ months, was admitted into hospital with a history of a fall on the head three days previously. There was general rigidity, conjugate deviation of the eyes to right or left with lateral nystagmus. Craniotabes was present and a bulging anterior

fontanelle. Temperature 101° F. and pulse 104. A milky fluid was withdrawn by lumbar puncture, which contained an excess of polymorphonuclear leucocytes and a leptothrix bacillus, of which a photograph was shown. The organism was Gram-negative, and no growth was obtained on either agar-agar or blood-serum. The illness ran an acute course, the child having a varying temperature and dying on the fifth day after admission. A sub-dural meningitis was found post-mortem, extending over both hemispheres, especially over the vertex in front. There was an extravasation of blood on the side of the skull on which the child had fallen. The meninges were congested. Examination of the pus revealed the presence of *Diplococcus pneumoniae*. On opening the right ear a small bead of pus welled up. A case of pyæmia and meningitis associated with a pathogenic leptothrix bacillus had been described by Ritchie and McDonald, who also spoke of terminal pneumococcal infection. Dr. McDonald had recorded five cases in which he found organisms similar to those described above in an epidemic of cerebro-spinal meningitis, and had concluded that the leptothrix was not a contamination. Dr. Milligan thought that the presence of leptothrix was more easily explained as a secondary infection, as this bacillus does occur about the mouth and throat.

Dr. CAUTLEY said that the important point was whether leptothrix was a cause of meningitis or a secondary infection. He had seen many cases of meningitis of that type but without the leptothrix bacillus. The clinical course seemed to point to a pneumococcal infection.

A Paper on the Effects of School Life upon the Vision of the Child was read by Mr. HARMAN. In all cases the eyes were under the influence of atropine, the ointment of 1 per cent. having been used four times a day for a week. Of every hundred children with defective vision over seventy had hypermetropia, and less than twenty were myopic. These hundred children represent about 10 per cent. of the school children, and so the incidence of myopia amongst school children in London may be considered not to exceed 3 per cent. About 70 per cent. of the cases were girls. This Mr. Harman attributed to the girls having less outdoor exercise and not being in such a healthy condition, as well as to the fine needlework done in school by the girls. During the school age the incidence of hypermetropia increases, as may be expected from what we know of the growth of the crystalline lens. At the same time the curve of myopia rises upwards to the highest positions on the chart, and such a phenomenon as this leads to the conclusion that the diminution of the hypermetropic astigmatism has been due to the transference of these cases to the myopic group. On the whole the condition of the eyes of London children is very fair, especially if we compare them with similar returns collected in Germany. The greater proportion of the cases of bad vision are due to natural conditions of the eye, that is, hypermetropia and hypermetropic astigmatism. Newborn infants are always hypermetropic. The incidence of "manufactured" bad vision, myopia and its associated astigmatisms forms between a quarter and a third of the whole of the cases. The evidence of the deterioration of astigmatic eyes indicates the desirability of a special oversight of these cases. Mr. Harman did not think that a healthy school life was harmful to the sight of the child population. In conclusion, Mr. Harman criticised adversely the paper on "The Inheritance of Vision," by Amy Barrington and Karl Pearson. Several points in his experience led him to different conclusions. Miss Barrington and Prof. Pearson would lead us to suppose that the increase of myopia was

due to fate, and hopeless, but in practice we find that the amelioration of school conditions and the relief of strain in ill-shaped eyes does stay the increase.

Mr. SYDNEY STEPHENSON agreed that it was futile to examine children's refractions unless the accommodation had been paralysed by atropine. Some years ago he examined 6000 eyes, under the Poor Law, in children ranging from eighteen months to eighteen years of age. In these he found myopia present in 6.58 per cent. He agreed that among the poor children of this country myopia was not of serious frequency. In his own figures the females were almost twice as much subject to myopia as were the males. He agreed in ascribing this to their employment in indoor work and lack of healthy exercise.

Mr. ERNEST CLARKE said that, although the subject was a tempting one, he would confine himself to reiterating what Mr. Stephenson had said as to the use of a cycloplegic. The statistics concerning the refraction of young people which were published without such were useless.

Philadelphia Pediatric Society.

MEETING held April the 13th, 1909, J. CLAXTON GITTINGS, M.D., President.

Lateral Subluxation of the Knee in an Infant.—Dr. J. T. RUGH showed the child, now aged 19 months, who had first been seen four months previously. She is the sixth child, and was breast-fed for thirteen months. Her only illness had been an attack of "some pulmonary trouble" between four and six months, during which she cried bitterly when picked up, showing some evident joint tenderness. She cut her first tooth at seven months, but did not walk until seventeen months. At fifteen months the mother first noticed a snapping of the left knee when it was moved freely, apparently causing no discomfort. Dr. Rugh saw it two weeks later, and found the cause to be lateral subluxation of the knee. There was marked relaxation of the structures about the knee, and the dislocation occurred when the leg was in partial flexion and the foot turned toward the other knee. Other joints were markedly relaxed, and there was evidence of malnutrition, but many of the signs of rickets were lacking. The child is now walking and improving constantly under proper hygienic treatment.

Double Congenital Calcaneo-valgus.—Dr. G. G. DAVIS showed a child, now aged over 3 years, whom he had first seen soon after birth. The general condition was so poor that there was doubt whether he would live. The feet were flexed so markedly that the dorsum was in contact with the anterior portion of the leg. They were also everted, and there was considerable prominence instead of a hollow in the soles of the feet. They were rotated outward so that the patellæ pointed laterally instead of anteriorly. The knees were also somewhat contracted. Treatment was first directed to the child's general condition rather than to correcting the deformity. The mother was instructed to stretch the feet daily and bring them as near as possible into a normal position. As the child improved, more forcible

stretching was done with the hands, the feet being put into plaster bandages every few weeks. For a time tin splints were used, replaced by apparatus as the child grew. Manual stretching was, however, continued. To correct the valgus the foot was firmly laced in the shoe aided by a double instep strap. To prevent calcaneus a heel strap was employed. To straighten the knees the apparatus was locked at the knee-joints, and a knee-cap was used to draw them back, and so favour extension. To correct external rotation the apparatus was carried up to a waist-band, which position kept the toes pointing forward. By these measures the deformities were largely overcome. The child was doing well and walking when he caught pneumonia, and for the past six months treatment has been neglected. While the case has relapsed considerably, the conditions are far better than they were at birth. The prognosis, with continued treatment, is very good. No operation was needed. While valgoid conditions are not rare, such a degree of equino-valgus as exhibited by this child is very seldom encountered.

Dr. RUGH expressed regret that Dr. Davis had not discussed the ætiology of this case, as this was always most interesting to him. The slight flexion of the knees, together with the peculiar facial expression and uncertain head movements, pointed to some cerebral lesion as the cause. Calcaneo-valgus is not uncommon in the new-born, but in those cases in which there is no lesion of the central nervous system, the condition almost always corrects itself, or is very easily corrected by manipulation or mechanical means.

Dr. DAVIS said that Dr. Rugh's case was a good example of the cases brought to the orthopædist because they cannot walk. Examination of many of these cases shows no definite cause beyond rickets, which needs treatment.

Pott's Disease.—Dr. JAMES K. YOUNG showed a woman, aged 45 years, who had come for treatment after having suffered five years without any local treatment. She had had a large lumbar abscess for four years, finally operated upon by a gynæcologist. Under the use of a Taylor spine-brace the abscess closed in four months, and she has remained perfectly well since. She exhibits a high degree of deformity, her height being now less than a girl of ten years.

Dr. YOUNG then showed a girl, aged 10 years, whom he had seen first four years ago, with deformity already produced in the upper dorsal region and paraplegia. He devised an apparatus fixing head, neck, and spine in one piece, which was immediately copied by Dr. Riely with such success. She was placed in a wheel coach of special design upon a tray, making pressure upon the posterior part of the spine. During the manufacture of the brace she made a perfect recovery, and shows a straight spine, while those who saw her wear her cuirass were surprised at the comfort she experienced in it.

The Early Diagnosis and the Treatment of Pott's Disease.—Dr. COMPTON RIELY, of Baltimore, Md., read this paper by invitation. He means by early diagnosis the detection of the trouble before the occurrence of angular kyphosis, marked sensory or motor disturbances or palpable abscess. The disease is almost, if not as frequent in adults as in childhood, but manifests itself differently in the two ages, being commonly diagnosed in the adult as disease of some organ or organs on account of its slower progress and the more frequent unilateral pains, which remain in one location longer, due to the larger size and greater proportion of mineral salts in their bones, which offer a greater resistance to the tubercle bacilli. There are also some differences in female adults, referable to the female generative organs.

The early symptoms are: Transmitted pains, at any part of the body or limbs below the seat of the disease, unilateral or bilateral, more severe at night and intermittent in character; weakness, stiffness, numbness, tingling of the limbs, loss of appetite, sleeplessness, malaise, slight elevation of evening temperature; enuresis in children; frequent urination in adults, increased by exertion; persistent constipation, nausea and uncontrollable vomiting at times, persisting hours or days, especially in adults; grunting, painful respiration, coughing or sonorous breathing; nervousness, excitability, irritability, hysteria and neurasthenia, more common in female adults; pelvic pains and various menstrual disturbances in females past the age of puberty, with exaggeration of all other symptoms at the menstrual epoch, often causing them to undergo various operations from which they derive no benefit.

The early physical signs are: Guarded gait; restless attitudes, standing or sitting; inability to bend or stoop without effort or pain; forward tilting and projection of the pelvis; rigidity of the muscles of the trunk and neck, especially the abdominal muscles; increased obliquity and co-aptation of the ribs; antero-posterior flattening of the chest; increased lordosis of the neck or lumbar region; increased backward projection of the dorsal region; increased tension of one or both of the psoas muscles at times; slight angular bend of the spine; increased deep knee-reflexes; night cries, night horrors and moaning. All of these symptoms and signs may be increased by jarring from riding, driving, walking, bending, lifting, stooping, etc. Patients presenting many or all of these signs and symptoms with a history of gradual onset and long duration, which have resisted medical and surgical interference, should lead one to suspect strongly Pott's disease, and a radiograph should be taken in the following manner: With a tube sufficiently soft to show the bones fairly dark, making a longer exposure, with the tube twenty-five to thirty inches from the plate. In tubercular disease of the spine, even before sufficient bone destruction has occurred to be detected, such a skiagraph will show a shadow of a cold abscess, and will greatly aid in making an early diagnosis.

Dr. Riely showed a number of radiographic lantern-slides showing tubercular abscess in patients whose ages ranged from seven to forty-five years whose histories were similar. Proof of his interpretation was that in some of the cases the abscess was actually opened. He also showed lantern-slides of typhoid spines, rheumatoid spines, and aneurysms, and explained how to differentiate the shadows of these conditions from cold abscess.

In both the ambulatory and recumbent methods of treatment the objective aim is to restore the anterior projecting and tilting pelvis to its normal posture, which will produce better straightening of the spine, restore the ribs and chest to normal conditions and relieve symptoms. Recumbency is advised during the acute stages, with extension and hyper-extension upon double, irregularly curved, inclined wooden planes, which are shaped to suit the requirements of the individual, so as to hyper-extend the spine at the seat of the disease. It starts by a thin edge on the back at a point opposite the anterior superior spine of the ilium, inclining gradually upward to the seat of disease, when it slightly changes its course until it reaches the occiput, when it curves suddenly to fit that region. Extending longitudinally on the middle of its upper surface is a groove to prevent too great pressure upon the spinous processes; this surface of the apparatus is well padded, the padding being thicker on the sides of the groove, thus giving this surface a transverse convex contour. The ambulatory method is advised for high

and double lesions, and consists of a shell aluminium brace that will support the whole spine and head, made over a metal case, the model of which has been obtained from an impression of the patient's back, neck, and back of head, corrected so as to reduce the lateral deviations, the lordosis in the cervical and lumbar regions, and the round shoulders or kyphosis in the dorsal region, the amount of correction depending on the amount of deformity, that of the severer forms being more gradual. Where the trouble is below the eighth dorsal vertebra a special spinal correcting apparatus which accomplishes the desired corrections during the application and setting of a plaster case will be needed.

Dr. YOUNG said he was much interested in the subject as presented by Dr. Riely, especially the value of the use of the cuirass in the treatment of Pott's disease, and had discovered the value of this in treating the patient who was presented this evening. He had shown this patient at a meeting at which Dr. Riely was present. The first apparatus was made of felt; other cuirasses have been made of celluloid, which were found very light and satisfactory, but they cannot be changed in shape as well as those made of aluminium, which was first employed in this manner by Dr. Riely. A similar cuirass to the one which Dr. Young used has been employed by Dollinger, of Budapest.

Dr. RUGH said, where the focus of disease is high he relies more upon plaster-of-Paris applied in suspension. Each case, however, must be treated according to its own indications. For the past year Dr. Rugh has been employing the old treatment of abscesses by aspiration, washing with normal salt solution, and injecting 10 per cent. emulsion of iodoform with remarkable results. Many very large psoas abscesses have disappeared under one aspiration. For sinuses he employs bismuth paste, but for the distinct abscesses and as an anti-tubercular agent he considers iodoform to be superior.

Dr. RIELY added that he had abandoned the use of hard felt, as it could not be made properly. In old sinuses he considers Beek's paste better than anything he has used.

Abstracts from Current Literature.

Medicine.

Dissecting aneurysm of the aorta in a boy aged 12 years; rupture into pericardium (*St. Bartholomew's Hosp. Reports,* vol. XLIII).—**T. J. Horder** reports a case of dissecting aneurysm of the aorta in a boy, aged 12 years, which ruptured into the pericardium. The boy was admitted to the hospital under the care of Dr. Ormerod, suffering from pain in the chest. The heart showed the following physical signs: Apex beat in sixth interspace one inch outside the left mammary line. The area of cardiac dullness extended upwards to the second costal cartilage, but not to the right of the sternum. In the third and fourth interspaces, to the left of the sternum, a loud to-and-fro murmur was heard which was thought to be a pericardial friction sound. Pulse 136; respirations 28; no dyspnoea. A presystolic

rumbling murmur in the nipple line in the fifth interspace was heard later. Nine days after admission the boy was suddenly seized with a spasm of difficult breathing and died within a few seconds. Post-mortem: The pericardium contained 12 ounces of blood and blood-clot. The heart was small and almost empty of blood. The valves, myocardium and coronary arteries were natural. The first part of the aorta was elongated, greatly dilated, forming a large fusiform aneurysm. The fusiform dilatation ceased rather abruptly above at the level of the ductus arteriosus. Considerable end-arteritis was present, with nodular thickenings of the intima, but without ulceration. About an inch above the aortic orifice the inner and middle coats had been torn by a transverse rent, extending almost completely round the vessel. From the annular rent a second rent proceeded in an upward vertical direction in the posterior part of the vessel. Towards the pulmonary artery this ruptured part of the aorta was seen to be covered by a recent clot, and a dissecting aneurysm, the size of a small walnut, had formed in this situation, burrowing into the sheath which is common to the two vessels. There was a small hole in the sheath of the dissecting aneurysm indicating the rupture into the pericardium. The aneurysm was not manifestly due either to congenital syphilis or to the action of micro-organisms. The dissecting aneurysm probably originated at the time of the onset of pain in the chest, which was fourteen days before death.

JAMES E. H. SAWYER (Birmingham).

Congenital hypertrophic stenosis of pylorus (*Arch. of Pediat.*, 1908, p. 686).—**J. Dorning** records a case in a male infant who was healthy at birth. He had vomited since birth, usually after each nursing. Artificial feeding was substituted but vomiting continued. The child was much emaciated. There was slight distension of the epigastrium, in which a nodule was felt. Operation and irrigation were refused. The child died at the age of nine weeks. No autopsy.

J. D. ROLLESTON.

A rubella epidemic (*Arch. of Pediat.*, 1908, p. 598).—**M. Michael**.—An epidemic of German measles broke out in an institution for children: 80 were attacked; 51 or 44·7 per cent. were boys, 29 or 34·1 per cent. were girls. The oldest patient was 14 years, 3 were under 2, 43 were between 2 and 6 years, 25 between 6 and 10, and 9 were over 10 years. In 35 fine branny desquamation occurred. The temperature ranged from normal to 102·2° F. In 48 the temperature was 99° or less, and lasted only two days. Mild conjunctivitis occurred in 32. In 19 there was slight coryza, and in 4 bronchitis. All except 3 suffered from glandular enlargement. Suppuration did not occur. Out of 64 cases examined leucopenia was found in 45, a normal count in 15, and leucocytosis in 4. Two relapses occurred. In both cases the second eruption appeared fifteen days after the first.

J. D. ROLLESTON.

Dental caries as a cause of disease in children (*Arch. of Pediat.*, 1908, p. 582).—**C. Herrman** reviews the numerous morbid conditions which may arise from dental caries, especially ulcerative stomatitis, cervical lymphadenitis, digestive disturbances and malnutrition. He found that out of 1200 school-children dental caries was present in 72 per cent. The highest percentage was found in children between 7 and 8 years. Of 1446 children between the ages of 8 and 15, 236 brushed their teeth regularly twice a day, 602 once a day, and the remaining 608 not at all. In dis-

cussing preventive measures Herrman recommends an increase in the number of dental clinics. J. D. ROLLESTON.

Distribution of bacteria in bottled milk (*Arch. of Pediat.*, 1908, p. 591).—A. F. Hess found that streptococci, tubercle bacilli, and other bacteria are most numerous in the upper layer of the cream, especially in the upper two ounces. This portion should therefore be discarded. The partially skimmed milk which is left contains 3 per cent. fat and 3.5 per cent. proteid, and is well suited for infant feeding. J. D. ROLLESTON.

Obscure fever in infancy and early childhood (*Boston Med. and Surg. Journ.*, vol. ii, 1908, p. 40).—J. Lovett Morse, in a survey of the various causes of obscure fever at this age, states that most cases of long-continued elevation of temperature without obvious cause are due to a mild degree of intestinal toxæmia. The temperature is usually not very high; in some cases it is continuous for weeks or months, in others it is intermittent. In most cases the general condition is more or less impaired, but a few children may preserve the appearance of robust health. Infants and young children are more exposed to, and less able to resist, auto-intoxication than older children and adults, since the antitoxic function of the liver is not so well developed and the intestinal secretions are not so abundant and active as in later life. Further, in infancy and early childhood, owing to the immaturity and irritability of the nervous system, a small quantity of poison which in later life would cause few or no symptoms may produce very severe ones. In the vast majority of cases dentition is not the cause of fever, the real cause being some disturbance of metabolism or intestinal toxæmia, but Morse has known cases where acute and high fever, sometimes of long duration, was due to disturbance of dentition alone. Bacterial infection of the urinary tract, usually secondary to gastro-enteritis and due to *B. coli*, is a commoner cause of obscure fever in infancy than later. Tuberculosis is probably seldom the cause of continued fever in early childhood. At this period tuberculosis tends to be disseminated and to run a rapidly fatal course. Chronic latent cases are therefore rare. Syphilis, though so important a cause of obscure fever in older children and adults, is probably not so in infancy and early childhood. J. D. ROLLESTON.

The teaching of writing from an ophthalmological standpoint (*Rev. d'Hyg. et de Méd. infant.*, vol. vii, No. 4, 1908, p. 330).—A. Péchin and C. Ducroquet contribute an interesting paper on this subject with illustrations. They arrive at the conclusion that all kinds of writing induce vicious attitudes. Upright writing is the most dangerous, because it is the most fatiguing, and necessitates a position of resting in which the pupil supports himself on one buttock. This position causes deformities and scoliosis of ligamentous origin in predisposed children. It is a fallacy to attribute to upright writing the merit of obviating one of the principal causes of myopia. The distance of the seat from the table should be such that the pupil when sitting upright has his elbows touching the table, the arms slightly separated from the trunk (about 30°), the arms thus becoming *crutches for the trunk*. Too low a table should be avoided, since its greater distance from the head induces the pupil to stoop. To counteract the tendency for the pupil to sit on one buttock, the table should be sufficiently long for the two forearms with the elbows to be able to rest easily in a position suitable for writing. A seat too near the table

encourages thoracic deformity by pressure on the sternum. A good position is the best preventive of visual trouble.

VINCENT DICKINSON.

Experiences in broncho-pneumonia (*Dom. Med. Monthly*, November, 1908).—**McVicar** reports on 75 cases: 64 were primary and 11 secondary; 45 males, 30 female; 24 per cent. occurred in the month of February. Deaths were 39 per cent. from primary and 73 per cent. from secondary broncho-pneumonia. It was found that the most serious feature in determining the prognosis was not the temperature or pulse but the rapidity of the respirations, the average maximum of 95 cases ending in death being 68, and of 39 cases with recovery 58. Hydrotherapy was proved of the greatest value; fluid by the mouth was pushed. Warm packs seemed the best method of controlling nervous symptoms, cold sponging being distressing to the child. Poultices were found to hinder free respiration, as shown by an increased rate of respiration following their use. Bleeding was used and found of value. Whiskey was considered of the greatest value owing to its action as a cerebral sedative, soothing restlessness. Expectorants appeared to be useless, and so was belladonna and atropine. Oxygen was of great value. Strychnine was used, but had to be discontinued in five cases on account of muscular twitchings.

J. PORTER PARKINSON.

The nutritive value of homogeneous milk (*Monatschr. f. Kinderheilk.*, June, 1908).—**Von Birk** reported that, according to experiments made in France, success had been obtained in so altering cows' milk under high pressure that the fat globules appear in very fine suspension, finer than in human milk. This suspension is permanent and its coagulability is quite distinct from that of ordinary cows' milk. He could not convince himself of the practical advantage of this milk as recommended in France; neither in healthy subjects, nor in delicate children, in his opinion, did it effect more than ordinary milk.

J. E. BULLOCK.

Heart spasm: a cause of habitual vomiting in nurslings (*Therapeut. Monatshefte*, August, 1908).—**Jöppert** relates an interesting observation in a nursling, who was seized with retching immediately on taking food. On passing the œsophageal sound there was found an impediment in the cardiac region, and, after gently overcoming this, the stomach (through the sound) could be felt to extend over the customary area. After continued feeding by tube the obstruction entirely disappeared. Jöppert considered the case also noteworthy because, according to Mikulicz, similar spasm over the præcordium may be the primary cause of dilatation of the œsophagus.

J. E. BULLOCK.

Appendicitis in infancy (*Monatschr. f. Kinderheilk.*, June, 1908).—In connection with cases of repeated attacks of vomiting, fever and restlessness in children past the first year of life, **Berkholz** relates the history of a child one and a half years old suffering from a fourth recurrence, in whom the symptoms of appendicitis were so evident that after a little while laparotomy was undertaken, and there was found an ulcerous change in the vermiform appendix.

J. E. BULLOCK.

On the value of causes influencing infant mortality (*Arch. f. Kinderheilk.*, Bd. 48, Heft 5-6).—In connection with recent statistics, which have thrown doubt upon the influence of feeding on infant mortality, and in its place have attached more importance to the social position of the

parents, **Tugendreich** has instituted inquiries respecting children, of similar social status, naturally and artificially reared, and has shown that, certainly among the poor, the mortality of children artificially reared markedly exceeds that of breast-fed children. He thinks also that the diet of working women is sufficient for lactation, and would have this opinion made widely known.

J. E. BULLOCK.

Scarlatinal rheumatism and neuritis ('*Arch. f. Kinderheilk.*,' Bd. 48, Heft 3-4).—As the result of many observations, **Wladimiroff** thinks that besides typical joint swellings after scarlet fever, joint affections are often simulated, and that cases in which lasting pains in the extremities exist may be diagnosed as post-scarlatinal neuritis.

J. E. BULLOCK.

The increase of fat in human milk by the increased consumption of fat ('*Arch. f. Kinderheilk.*,' Bd. 48, Heft 3-4).—**Moll** finds that by the supply of fat food an increase of fat in the mother's milk can be produced, and an increased growth of the child be obtained. The improvement in the child shows itself not only by an increase in weight, but by an improvement in the stools. He thinks this should have a bearing on the proper feeding of a wet nurse in private families.

J. E. BULLOCK.

So-called congenital and early acquired rickets ('*Jahrb. f. Kinderheilk.*,' Bd. 67, Heft 6).—**Wieland** brings forward important considerations on the question of congenital rickets. A congenital softening of the cranium is often met with, but this skeletal anomaly has nothing to do with true rickets, and shows another anatomical condition altogether different from typical craniotabes; but a large number of children with this softening of the cranium show later signs of rickets. Wieland thinks that the clinical proof of rickets in the new-born is not possible, and defers to a later period his histological investigations relating to the question.

J. E. BULLOCK.

Pathology.

Case of congenital syphilitic aortitis ('*Journ. of Pathol. and Bacteriol.*,' vol. xii, p. 2).—**Oskar Klotz**.—Still-born male child, born of a healthy mother, but an indefinite history of syphilis was obtained from the father. The anatomical findings in the child were: atelectasis of the lungs, petechial hæmorrhages of the thymus and pleura, enlarged spleen, hæmatoma of the scalp, rudiment of spina bifida over the coccyx, and syphilitic aortitis. In the arch of the aorta there was an area of change in its wall, with some blood infiltration of its deeper layers. This arterial change extended from the arch towards the ascending aorta, and the affected area was somewhat raised. When viewed from the intimal surface there were noticed irregularly radiating grooves furrowing the surface over the arch, like the puckerings of the intima seen in acquired syphilis. No break was found in the intima to account for the infiltration of blood in the vessel wall. On section the vessel wall was so altered that there was difficulty in locating the different layers. The intima was thinned, the surface was not smooth, and the whole of the intima was permeated by fine elastic threads, which formed a kind of network through it. The internal elastic membrane was present as a broken-up lamina, which besides being partially destroyed was also split up longitudinally into several lamellæ. The connective tissue

of the intima was fairly cellular, but there was no infiltration of leucocytes. There was loss of tissue at one portion of the lamina where it lay over the hæmorrhagic area. The media showed the most change. The boundary zone showed a small-celled infiltration which was particularly localised about the vasa vasorum. At the site of the blood infiltration the medial tissue was almost entirely lost. Towards the lateral margins of the hæmorrhage the media was seen in the process of destruction, in which the muscle and elastic fibres were involved. A stringy tissue without nuclei was all that remained of the tissue of the media. The elastic fibres existed only in isolated patches. This process of necrosis had advanced close to the adventitia. In some parts of the media there were small dense aggregations of fibrous tissue. The adventitia showed a small-celled infiltration about the vasa, the leucocytes having mostly the character of lymphocytes.

JAMES E. H. SAWYER (Birmingham).

Leucocyte count in normal children and in pertussis (*Arch. of Pediat.*, 1908, p. 831).—H. O. Mosenthal examined the blood of "normal" children at the New York Foundling Hospital, and found that the average leucocyte count varied between extremely wide limits (29,600 to 7000). He attributes the leucocytosis to the fact that nearly all of them suffered from rickets, subacute bronchitis and secondary anæmia. There was a slight diminution in the polymorphonuclears with a corresponding increase in the mononuclears as compared with other children. During the catarrhal stage of pertussis the leucocytes increase to about double the normal, and the mononuclears increase about 55 per cent. at the expense of the polymorphonuclears. In the paroxysmal stage the changes were less marked. He regards a leucocytosis with an increase in the mononuclears at the expense of the polymorphs as an aid in the diagnosis of pertussis during the catarrhal stage. In cases which have a cough, but do not develop pertussis, leucocytosis may occur, but there is then a marked increase of polymorphs at the expense of the mononuclears. These blood changes may therefore be regarded as of value in the diagnosis of whooping-cough.

J. D. ROLLESTON.

Therapeutics.

Treatment of cerebro-spinal meningitis with Flexner's serum (*Edinburgh Med. Journ.*, October, 1908).—Claude Ker describes his experiences of this treatment in a series of thirty-three cases during a recent epidemic of cerebro-spinal meningitis in Edinburgh. The normal dose adopted for children was 30 c.c. if possible, but if much less fluid than this amount was obtained on lumbar puncture 15 c.c. were substituted, and in particularly bad cases the remaining 15 c.c. were given subcutaneously. The best plan appeared to be to repeat the injection daily for the first three or four days. If the injections were taken badly and were followed by restlessness or distress, it was considered advisable to wait a day or two. Usually as much fluid as would flow freely was removed by lumbar puncture, and then as full a dose of the serum was given as could be introduced without causing pressure symptoms. The broad rule was laid down that less was to be injected than had been abstracted. The favourable results to be noted are: A lower temperature next day and frequently less delirium; some return of consciousness; an improvement in the colour of the complexion; a diminution in the pain and stiffness about the head; and,

occasionally, something in the nature of a crisis, with rapid amelioration of the symptoms. The mortality in his thirty-three cases, admitted in all stages of the disease, was 14. He was struck by the completeness and rapidity of the recovery in successful cases, as contrasted with the results of this disease in patients not so treated. The survivors of the latter class usually had been some two months in the hospital before becoming fit to be discharged, and were often totally deaf. The Flexner cases were discharged completely well, with two exceptions, and few were detained in the hospital for more than a month. In the case of relapses, also, the serum proved very efficient.

G. A. SUTHERLAND.

Treatment of tetanus with subarachnoid injections of magnesium sulphate (*'Amer. Journ. of the Med. Sciences,'* December, 1908).—**Robert Miller.**—The case was a boy, aged 7 years, suffering from acute tetanus, and admitted to hospital on the tenth day. The boy was knocked down by a cart; he fell on some sharp cobble stones and sustained a lacerated cut on one of his palms. The first symptoms appeared seven days afterwards. After admission to hospital eleven lumbar punctures were made within thirteen days, approximately 2.5 c.c. of a 25 per cent solution of magnesium sulphate being injected into the meninges at each puncture. Extensive paralysis followed each injection and involved usually all the muscles, except those of the head, neck, and diaphragm, lasting eighteen to twenty-nine hours. The injections were followed several times by respiratory collapse, lasting eleven to fourteen hours, and the pulse dropped, though not to a dangerous level. Antitoxin daily for fourteen days in doses varying from 1500 to 7000 units, copious saline enemas and effusions and sedatives for a short time were also used in the treatment. The lacerated wound was excised and the part carefully carbolised. The chief danger in the use of intra-spinal injections of magnesium sulphate lies in its direct depressing influence upon the respiratory centre. Miller gives brief extracts of thirteen other reported cases treated by this means. Of eleven cases treated by subarachnoid injections five recovered, giving a mortality of 55 per cent. Three cases treated with infusions of sulphate of magnesia injected subcutaneously all recovered; the cases were all mild ones. The rationale of the treatment seems to be that the magnesium sulphate achieves complete muscular relaxation, and this benefits the patient inasmuch as it prevents rapid exhaustion due to convulsions and allows of the patient taking nourishment.

J. ALLAN (Edinburgh).

Treatment of severe forms of broncho-pneumonia (*'La Clin. Infant.,'* November 15, 1908, No. 22, p. 703).—**Le Gendre** says that in congestive asphyxiating forms the first indication is to produce reflex vasoconstriction, and this is most successfully accomplished by cold thoracic packs, a method far preferable in these cases to cupping glasses, and especially to vesicants, which should be absolutely forbidden in acute bronchitis and broncho-pneumonia of childhood. Wrapping the whole body in wet clothes can also be employed. The first method is carried out as follows: Take some tarlatan, long and wide enough to envelope the thorax from the navel to the shoulders, and fold it several times so as to make a fairly thick compress. Commercial tarlatan is full of starch and must be freed from this by soaking. When it is sufficiently soft it is folded into a dozen thicknesses, and soaked in cold water at a temperature of 18° F. and applied moist, but not dripping, round the infant's thorax as far as the neck, flaps

being cut to cover the shoulders; the whole is then covered with "chiffon taffetas." The first effect of this procedure upon the infant is a deep reflex inspiration; he begins to cry, which previously he had not strength to do. The compress is left *in situ* a quarter of an hour and the application is renewed every quarter of an hour, and after a few applications the infant falls asleep. In less severe cases the applications are made every hour or every two or three hours. This method of treatment acts, first, by producing an internal vaso-constriction of the pulmonary capillaries, and second, a vaso-dilatation of the cutaneous capillaries.

VINCENT DICKINSON.

Meningococcic serum (*Med. Press,* January 6, 1909).—At another meeting of the Gesellschaft **Kraus** and **Baecher** gave their experience of their new serum for meningitis, with which they have been experimenting for some time past. The first proof of its efficacy was by the opsonic method of Neufeld, which, as expected, was quite satisfactory. The next point was its application, and this they considered as most important. They prefer Pfeiffer's method of injection into the peritoneum, where both antitoxic and opsonic powers can be accurately measured. The therapeutic results which they have obtained in hospital are that two-thirds of the hopeless cases have recovered. The cases selected were those which had been given up as hopeless, so that mild conditions have not yet been tested.

T. R. WHIPHAM.

Otology, Laryngology, and Rhinology.

Otogenous intra-cranial complications in children (*New Orleans Med. and Surg. Journ.,* January, 1909).—**Homer Dupuy** describes the case of a male child, aged 5 years, who had slight right earache on January 26, 1908, and no further trouble until February 1, when pain in the stomach, vomiting and intense headache set in. Gastro-intestinal disturbance and, later, meningitis were diagnosed. Incision of both drums on February 10 resulted in pus evacuation in the right side. The antrum was opened on February 12 on account of right internal strabismus, opisthotonos, contracted pupils and flexor contractures of the lower limbs. There was an exposed area over the tegmen antri with an extra-dural collection of pus, together with lateral sinus thrombosis. The child recovered, the left mastoid requiring operation also on February 15.

MACLEOD YEARSLEY.

A case of fatal venous hæmorrhage from the ear in a nursling (*Norsk. Mag. f. Læg.,* 1907, p. 1425).—**Uchermann** reports the case of a child, aged 1 year, who developed an acute swelling on the left side of the neck, and later a purulent discharge from the ear. After four days there was a sudden hæmorrhage from the ear. The child was brought to the hospital and hæmorrhage recurred. Partial resection of the mastoid proved this to be healthy. The posterior meatal wall was resected; it was then found that the hæmorrhage originated from the anterior meatal wall directly at the drum. Pyæmia and pleuro-pyæmia ensued. Fourteen days later renewed severe hæmorrhage resulted fatally. The autopsy showed an opening in the auditory canal leading into an abscess cavity, which communicated with the internal jugular vein by a small opening.

MACLEOD YEARSLEY.

Ascaris lumbricoides escaping through the ear (*Ugeskrift for Læger*, No. 6, 1909).—**Holm** reported a case in which an *Ascaris lumbricoides* passed through the Eustachian tube and out of the ear in a child, aged $3\frac{1}{2}$ years. The mother stated that the child, whilst playing, suddenly began to sneeze and scratch her nose, and after a few moments to scream in agonising pain, holding her hand to her ear. Thinking that the child, who had been for some time suffering from post-scarlatinal otitis media, had been seized with sudden pain, the mother began to syringe the ear, when she saw a worm trying to work its way out of the ear. She pulled it out and brought it to Holm for inspection. Examination of the child revealed a large defect in the membrana tympani, but nothing abnormal was to be detected in the fauces.

MACLEOD YEARSLEY.

Tuberculosis of the ear (*New York Med. Record*, September 26, 1908).—**Sohier-Bryant** summarises his subject thus: Tuberculous invasion of the ear is primary or secondary. Primary invasion is direct through the Eustachian tube or through the mastoid lymphatics. Tympanic tuberculosis is a very early sign of a more general infection. It also gives an accurate indication of the course of a concomitant pulmonary tuberculosis. Tuberculous mastoiditis has similar characteristics to tuberculous inflammation of other bones. Prognosis for the ear tuberculosis is good with proper hygiene and local treatment, and early thorough operative treatment in cases of bone involvement. Proctanin dry treatment is the most efficacious for tympanic tuberculosis. The evil effects of a tympanic tuberculosis may cause pulmonary tuberculosis to take a lethal course.

MACLEOD YEARSLEY.

The present status of the radical mastoid operation for the cure of chronic purulent otitis media (*New York Med. Record*, October 10, 1908).—**Wendell Phillips** considers that the radical mastoid operation is usually contra-indicated in young children because the disease is rarely of sufficient extent to require it; because it usually yields to local treatment, providing diseased adenoids and tonsils are removed; because by establishing free drainage through a large perforation, with well maintained local treatment, a cure usually results; and because it is better to place reliance upon these measures, aided by the marvellous recuperative powers of youth, than partially or wholly to destroy the hearing function.

MACLEOD YEARSLEY.

Surgery.

Intestinal obstruction in a child, aged 13 years, due to strangulation in Meckel's diverticulum (*La Clin. Infant.*, December 1, 1908, No. 23, p. 713).—**L. Dufour** communicated this case at the Soc. de Pédiât. The boy was admitted into hospital, having been ill for five days with violent abdominal pains and distension, vomiting and obstruction. Urine scanty, thirst intense, pulse 80, temperature 37.5° F. No trace of hernia. A laparotomy was performed the next day. About 25 to 30 cm. from the ileo-cæcal valve the small intestine was strangulated by a diverticulum 5 to 6 cm. long, attached to the anterior aspect of the intestine, through which a loop of gut about 40 cm. long had passed; at the point of strangulation it was ulcerated, the ulceration having invaded the serous and muscular coats, the mucous membrane being intact. Convalescence was uninterrupted.

VINCENT DICKINSON.

Congenital dislocation of the hip-joint ('*South Calif. Pract.*,' August, 1908).—**Richardson** advocates the Hoffa-Lorenz open method. He recently operated on a case where the acetabular socket was merely represented by a ring of cartilage; the acetabulum was deepened, and reduction easily accomplished without tenotomy or muscle division. The result showed no shortening, and the limping while walking is much less. The X-ray picture showed that anatomical reposition is perfect. This method answers best between the ages of three and ten. No muscles need be cut as a rule, and the after-treatment is much simpler than after the bloodless method.

J. PORTER PARKINSON.

Intussusception ('*The Post-Graduate*,' January, 1909).—**Erdmann**, since his last paper on this subject ('*Journ. Amer. Med. Assoc.*,' January, 1905), has operated on eleven cases in infants varying in age from four months to twenty-two months. Four were excised, all with fatal results: seven were reduced and all recovered. This horrible contrast emphasises the need for early operation in all cases. In 50 per cent. of the cases no tumour was found on palpation, it being often hidden under the costal arch of either side. The author strongly disapproves of all methods of air inflation or hydrostatic reduction, and recommends immediate operation. Reduction should always be tried by compressing the distal end of the tumour in the proximal direction, and *never* by traction. If reduction be impossible excision with anastomosis is necessary. **Rowen** ('*Boston Med. and Surg. Journ.*,' January, 1909) reports four cases of acute intussusception. He considers the history to be of the greatest importance: Sudden abdominal pain with screaming, pallor, and perhaps vomiting in a previously healthy infant. This often completely passes off for a short time, when the pain returns and blood and mucus may appear on the napkin. He states that the tumour is seldom felt, and when it can be palpated it is rounded and not sausage-shaped. In three of his cases no tumour could be felt. He strongly deprecates any form of treatment other than immediate operation.

J. PORTER PARKINSON.

A case of congenital fibroma of the finger with remarks on tumours of the finger ('*Wien. klin. Rundschau*,' October 18, 25; November 1, 8).—**Frank** remarks that tumours of the fingers are extremely rare as compared with those of other parts of the body. In this case there was nothing abnormal in the family history; none of the family—and there were many brothers and sisters—ever had any tumours. At birth two small swellings, the size of a pin's head, were noticed on the corresponding sides of the distal phalanges of the fourth and fifth fingers of the left hand. No notice was taken till the fourth month, when the swellings had grown considerably. On examination they were solid, rigidly circumscribed, semi-spherical, with the broad base upwards and about the size of two peas. The diagnosis was *echondroma* or fibroma. The tumours were removed; the adjoining tissues were not infiltrated. Microscopical examination showed a pure fibroma. One and a half years have now elapsed since the operation and only a small smooth scar shows the site of the tumour. In view of the possibility of sarcomatous development in congenital fibromata early operation is advisable, whilst watching the cases as long as possible.

M. D. EDER.

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Original Articles.

A CASE OF GLIOMA OF THE SPINAL CORD.

By GEORGE PEACOCKE, M.D., F.R.C.P.I.,
Physician to the Adelaide Hospital, Dublin.

CASE.—A girl, aged 11 years, was admitted to the Adelaide Hospital under my care on Friday, March the 19th, and died about ten hours after admission.

She was one of a family of ten. Her father died about six years previously from pulmonary tuberculosis; her mother is alive and healthy. One brother died suddenly at the age of sixteen from heart disease, and a sister died from scarlatina. The other members of the family are alive and well, but none of them are very strong or robust.

With the exception of an attack of typhoid fever when an infant she had not suffered from any serious illness, but, like the other members of the family, she was not a strong child, and was a martyr to chilblains.

For the past six years she had been an inmate of a small orphanage in the neighbourhood of Dublin, where I have every reason to know she was well looked after.

Five weeks before her death she complained one morning of pain and stiffness in her neck, and it was noticed that she kept her head bent over to the left side. She was otherwise in her usual health, and it was thought she had simply got a "stiff neck." As her neck

did not improve during the next two or three days she was seen by the local doctor, who agreed with the diagnosis already made.

He saw her altogether on three or four occasions, but apparently no symptoms presented themselves suggestive of any grave disorder.

On Friday, March the 12th, a week before her admission to hospital, though still suffering from a stiff neck she was able to amuse herself with her playmates on a fly-pole in the grounds. On that evening her mother went down to see her, and finding that she was still complaining of her neck, brought her back to town in order to have further advice.

On her arrival home her mother noticed, when at tea, that the girl did not use her right hand, and was apparently unable to do so. She seemed out of sorts, tired, and had very little appetite.

On Saturday and Sunday she remained in much the same condition, but on Monday, as she was not so well, her mother sent for a doctor who lived near. On Tuesday she complained of severe pain at the back of her neck and down her spine, and could not bear to be moved. The pain was more severe on Wednesday; she had not passed any water since the previous morning, and the bladder was emptied by a catheter. She was able, though with difficulty, to raise her right leg slightly off the bed, but her right arm was paralysed. There was no improvement in her condition on Thursday, and on Friday she was admitted about noon to hospital. Her temperature, which had been taken during the week previous to her admission, was on all occasions subnormal.

I saw her almost immediately after her admission, and she then appeared to be very ill. She was lying on her back, and resented any examination owing to the pain produced by the slightest movement. She was quite conscious; her face was deadly pale with a marked cyanotic hue. Her respirations were frequent, and an examination of her chest revealed abundant fine râles over the front on both sides. The back could not be examined. The breath-sounds over the middle lobe of the right lung were pneumonic in character.

Her heart-sounds were normal in character, but feeble.

Her bladder was distended, and a pint of normal urine was withdrawn by catheter.

Her right arm and leg were paralysed, but sensation was present, both tactile and painful. Her left leg and arm appeared to be unaffected.

The knee-jerk was slightly present on the right side; absent on the left. I saw her again in the evening shortly before her death,

and found the pulmonary signs had cleared up with the exception of those in the right middle lobe.

Her breathing was more rapid, and her whole appearance that of approaching death—anxious expression with livid pallor of the face. She was quite conscious, her one wish being not to be moved on account of the pain it gave her. Her left arm and leg had become paralysed. Death occurred as the result of respiratory failure.

Twenty-four hours after death we made a post-mortem. The abdominal organs and heart were normal. The middle lobe of the right lung was consolidated, but otherwise the lungs were normal.

Prof. J. A. Scott has kindly furnished me with the following account of the appearances presented by the central nervous system: On removing the brain, in the section of the spinal cord there was apparently a blood-clot in the centre of the cord. The spinal cord was then removed, and with the brain hardened with formalin. Vertical cross-sections of the brain showed nothing abnormal in front of the *crus cerebri*. The pons and medulla were separated from the cerebellum, and cross-sections were made at intervals of a couple of millimètres. The pons was normal, as was the upper portion of the medulla. At about the level of the *calamus scriptorius* the blood discolouration could be first seen near the posterior surface; from this it could be traced downward in the successive sections for a distance of about 11 cm. into the upper part of the cervical cord. At its commencement above it appeared as a somewhat circular spot, about 3 mm. in diameter, with a slightly lighter centre, while 10 cm. down it was about 2 mm. long and 1 mm. wide, lying to the right side. Between 10 cm. and 11 cm., where it terminated, it became a little larger, about 2 mm. in diameter, and extended close to the central commissure into the post-internum column of the opposite (left) side.

Microscopical sections were made from portions taken in the medulla and the upper part of the cord. Both have the same structure—that of a glioma with some small hæmorrhages diffused in it.

The outer portion was composed of a network of the processes of neuroglia-cells, with a number of small round cells and some blood-vessels.

Inside this was a zone of free blood and in the centre a hyaline substance, probably an albuminous fluid fixed by the hardening agents. In the neighbourhood of the main portion several smaller portions could be seen, of which a similar description might be given.

The small tumour lay in the postero-internal column in the cord, where it pressed on the various structures and considerably distorted the normal portions of the white and grey matter. The crossed pyramidal tract in the right side was degenerated.

The case, I think, presents several features of interest.

Firstly, the locality of the tumour. Tumours of the spinal cord are relatively rare. Schlesinger found only 147 in 35,000 autopsies and 151 in 6540 tumours. The ratio to tumours of the brain is 1 to 13.

Secondly, the age of the patient and the character of the tumour. In a table of Schlesinger quoted by Starr, the proportion of meningeal intra-dural spinal cord tumours to medullary was 142 to 125. Of these latter tubercle accounted for 62, glioma 20, sarcoma 14, gumma 7. The remainder were lipoma, cysticercus, melano-sarcoma, neuroma or uncertain. Tumours of the spinal cord occur in childhood, but with less frequency than in adult life. In a series of 100 cases as many as 70 were found in patients over the age of fifteen years.

Thirdly, the duration of the symptoms. Though the duration varies somewhat according to the nature of the tumour, it is on an average about sixteen months from the onset of symptoms to death. In this case the duration was only five weeks; a week before death occurred the girl seemed to be in her usual health, except for the pain and stiffness in her neck.

The locality of the tumour, viz. the cervical region, was typical of glioma occurring in the spinal cord, and the tendency to hæmorrhages has also been frequently observed. Probably hæmorrhage accounted for the rather sudden onset of the symptoms, which caused a fatal termination to the case.

The condition of the patient on her admission to hospital, as well as the short time at my disposal, prevented me from making as careful an examination as I should have wished. The facts that I was able to elicit were: (1) motor paralysis commencing in the right arm, then involving the right leg, and finally, shortly before death, the left arm and leg; (2) no loss of sensation, tactile or painful, in the legs; and (3) no apparent wasting of the muscles.

A CASE OF FŒTAL RICKETS, WITH COMMENTS.

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DIVERGENT views being held as to the existence or non-existence of such a disease as foetal rickets, the following case, which presents several points of interest, seems worthy of description. The following are the notes of the case :

Family history.—Father and mother both alive and quite healthy. Another of their children, aged 9 years, is considered by the parents to have been born with rickets, but in support of this statement there is no very great amount of evidence. There is no history of any other bone trouble on either side of the family. No history of any disease of the thyroid or of tubercle, and no evidence of any syphilitic strain can be obtained. The maternal grandmother died from cancer, and one uncle died from cancer of the throat. There have been no miscarriages. The mother had good health during this pregnancy up to the birth of the patient.

Past history.—This child is the third of a family of five. The labours were all easy with the exception of this one. For the birth of this child, although it was calculated that she was three weeks premature, instrumental delivery was necessary, pointing probably to enlargement of the head. The parents are both very distinct in their statements that the child was born with deformed bones, and that their doctor told them, when the child was two weeks old, that it was suffering from rickets. Unfortunately this doctor is in South America, and it has been impossible to communicate with him. The bones at birth were enlarged at the ends, but the bowing has increased progressively with the age of the child. The eruption of the teeth occurred at the right time. The child did not suffer from snuffles, or sores round the mouth, or rashes. She was breast-fed until the age of nine months, when she was given milk and barley-water in equal parts, with bread and butter. She has been free from bronchial symptoms, laryngismus, night sweating, gastro-intestinal trouble and convulsions.

She began to walk when about three years old.

The anterior fontanelle did not close till the child was between three and four years old.

About two years ago she broke her right femur as the result of a slight fall, the remaining signs of which can be seen in the skiagraph.

The patient was brought up to the infirmary on account of the swelling in her neck, which, about two weeks previously, was said to have increased in size and to have become painful, causing some difficulty in swallowing, with some embarrassment of respiration.

She is a bright and intelligent child. These is a considerable

FIG. 1.



FIG. 2.



enlargement of the thyroid, which extends on the right side almost to the angle of the jaw, and downwards to the upper surface of the clavicle; anteriorly the edge overlaps the anterior surface of the trachea. The isthmus is enlarged and easily felt, while the left lobe is smaller than the right, extending to within three quarters of an inch of the angle of the jaw.

There has been no pain or any difficulty in swallowing or breathing since admission.

The consistence of the thyroid is soft, and in parts almost semi-fluctuating.

The head is square-shaped ; frontal eminences marked ; parietal eminences enlarged. Nose moderately well formed ; nasal bones firm ; fontanelles closed.

Teeth badly shaped and carious.

No enlargements or deformities are felt in the upper arms or clavicles. The radius and ulna of both arms are slightly bowed out, and the lower epiphyses are much enlarged. There is no tenderness.

There is slight lateral curvature of the spine. When standing the trunk is inclined unduly forwards, giving an undue prominence to the buttocks, simulating to a certain extent in this respect an achondroplastic condition.

There is enlargement of the epiphyses of the lower ends of the femora, and of the tibiæ and fibulæ, especially at the lower ends of the latter bones. The right femur is bent and shows the line of fracture. Both tibiæ are much bowed outwards and forwards.

There is distinct beading of all the ribs at the costochondral junctions.

The laxity of the ligaments and fasciæ are well marked. The legs when fully extended at the knees can be flexed on the trunk so that the feet touch the face. The very marked degree of flat-foot is very evident (Figs. 1 and 2).

The heart and lungs show no abnormal sign, except that there is slight impairment of the note over the right base behind, with some slight diminution of the entry of air over this area, due probably to the lateral curvature of the spine and the enlargement of the liver.

The abdomen is full and prominent. The liver dulness extends from the fifth rib to just below the costal margin, while the liver edge can be felt about a finger's breadth below the edge of the ribs. Nothing else abnormal is found in the abdomen.

The blood.—Red cells normal in number and shape ; hæmoglobin, 90 per cent. ; white, 9200 ; polymorphonuclear, 48 per cent. ; large mononuclear, 7·5 per cent. ; small mononuclear, 38·5 per cent. ; eosinophiles 5·5 per cent. ; transitional, 1·5 per cent.

The mental condition of the child is very bright and intelligent. Skin and hair are soft.

The points in favour of the case being one of rickets are :

- (1) The condition of the bony skeleton.
- (2) The enlargement of the liver.

(3) The laxity of the ligaments round the joints.

(4) The flatness of the feet.

(5) The history of lateness in "walking," and of closure of the anterior fontanelle.

(6) The absence of signs pointing to other conditions with which fœtal rickets might be confounded.

For example, in the family, or the patient, no evidence of *syphilis* is forthcoming.

Against *achondroplasia* we have the absence of any disproportionate shortness of the limbs, any marked shortening of the base of the skull, or of marked stunting of the nasal bones. The characteristic trident hand of *achondroplasia* is entirely absent, and there is no shortness of the hands. The waddling gait is also absent. In *achondroplasia* the finger-tips rarely reach as low as the level of the great trochanter. The thyroid in this case is enlarged, and therefore perhaps *cretinism* should be mentioned in the diagnosis, but the signs and symptoms of this state are so essentially different from those of this patient that they need not be enumerated.

Similarly the disease called *cleido-cranial dysostosis*, which affects during embryonic life mainly the membranous bones and not the cartilage bones, and from which I believe the patient in this photograph has suffered, may be dismissed (Fig. 3).

Granted, then, that the case is one of fœtal rickets, we must ask what relation such a condition has to the post-natal disease. Ballantyne states that changes in the bones of the fœtus occur, especially at the close of intra-uterine life, which "resemble as closely the form of rickets which develops in the second year of life, as any ante-natal disease can resemble any post-natal one."

If we consider the generally accepted views with regard to the ætiology of the ordinary infantile form of the disease, it is obvious that many of the predisposing causes, such as want of fresh air, sunlight, and generally defective hygiene, cannot come into play. The fœtus might, however, perhaps be supplied with a deficiency of fat and protein, and possibly this may occur when the mother is in bad health during pregnancy.

In this case, however, the mother states that her health was perfectly satisfactory throughout her pregnancy.

One cannot help thinking that other factors may be at work which exert a modifying influence on the formation of bone, and, indeed, on other structures, such as muscles, ligaments, and liver, which lead to results simulating the post-natal disease, but owing, perhaps, a different ætiology.

It is recognised that the privation of lime has little to do with the development of ordinary rickets, that the administration of lime salts will not cure rickets, and lastly, that the majority of rickety children have been fed on a diet which is particularly rich in lime salts. Still, the disease is of such a nature that rickety bone contains only 32-52 per cent. of lime, as compared with the 63-65 per

FIG. 3.



cent. in normal bone, the harmful factors at work preventing the proper calcification of the bones. Presumably there is a similar imperfect calcification in the foetal bones in foetal rickets.

The question then arises: To what is this due? May it conceivably be in any way connected with the condition of the thyroid? There would appear to be some connection between the calcium metabolism of the body and the activity of the thyroid.

Ballantyne says that "with regard to experiments upon animals,

it has been stated that the removal of the thyroid in a pregnant animal will cause the birth of a foetus with rickets," and "further, it has been found experimentally that in cases where the thyroid of the bitch was in part removed the foetal puppy showed a hypertrophied thyroid but no colloid." Hector Mackenzie, in the last volume of Allbutt's 'System,' writes that "various experiments made on young animals prove that the removal of the thyroid arrests skeletal growth." Foetal rickets is, however, not an arrest of the skeletal growth, but a perversion of the process. The arrested condition of the skeletal growth is due to arrest of the functions of the thyroid, as in cretinism. Is it not reasonable to suppose that the perversion of the skeletal growth in intra-uterine life may be due to perversion of the thyroidal function, and that the enlargement of the thyroid which is sometimes met with, as in this case, is a manifestation of increased glandular activity to compensate for such supposed perversion?

The excretion of phosphorus is much increased after the administration of thyroid gland, and also in exophthalmic goitre, and it may be that the beneficial effects of phosphorus in rickets are exerted through the thyroid. In Von Noorden's book on metabolism it is stated that "the good effect of phosphorus therapy in rickets is said by some to be due to improvement in the calcium circulation," and the "tetany of rickets is attributed to the poverty of calcium in the central nervous system."

The work of Blair Bell is interesting also in this connection. In a paper read before the Obstetrical Section of the Royal Society of Medicine last year he produced considerable evidence to show that menstruation is dependent upon the calcium metabolism of the body. In a paper in the 'British Medical Journal' of April the 20th, 1907, he advanced the view that pregnancy is terminated when a large accumulation of calcium occurs in the mother's blood, due to the amenorrhœa of pregnancy bringing about contraction of the uterine muscles. These observations on calcium metabolism are of much interest from the medical standpoint, and, I think, possibly in connection with this case, because it has long been recognised that the thyroid is frequently enlarged during menstruation and pregnancy. In the opinion of Blair Bell calcium metabolism is largely influenced by the secretion of the ductless glands. In a paper read before the Liverpool Medical Institution he stated that he had found the blood calcium index low in cases of exophthalmic goitre, *i. e.* in a condition of hyperthyroidism. He then excised the thyroids, and, as far as he could, the parathyroids of four cats. Two died in a few days,

one with tetanic convulsions, the other with great muscular weakness and some spasm. A third died in about a fortnight with great muscular weakness. The calcium index rose to a very high figure (as much as 18 in one case) before death.

It will be interesting to see if these results are confirmed. As far as they go these experiments tend to prove that in conditions of hyperthyroidism the blood calcium index is low, while in conditions of hypothyroidism the blood calcium index is high. In cretinism, therefore, the blood calcium index should be high during the stage when the calcium is being excreted, instead of being utilised for the formation of bone.

Poynton and Cheadle state that the viscera are deficient in phosphate of lime in rickets.

Mackenzie, in an article on "Graves' Disease," makes the remark that osteomalacia has been noted in connection with Graves' disease. Here, again, we meet with another example of thyroid disturbance associated with a perversion of calcium metabolism.

It is interesting also to observe that Silvestri records successful treatment both of tetany occurring in successive pregnancies and in the convulsions of rickets, by the administration of calcium salts. Each of these conditions he regards as due to some disturbance in the metabolism of calcium, probably a hypocalcification of the nervous system.

It would appear, therefore, that quite possibly the enlargement of the thyroid in this case has some connection, either directly or indirectly, with the bony changes, and that it is not present as an independent entity.

THE TREATMENT OF CEREBRO-SPINAL MENINGITIS IN CHILDREN WITH FLEXNER AND JOBLIN'S ANTI-SERUM.

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In a recent contribution* on meningitis in children, we drew attention to the extreme importance to be laid upon the value of

* 'Liverpool Med. Chir. Journ.,' January, 1909.

the examination of the cerebro-spinal fluid obtained by lumbar puncture.

In this, a further contribution to the same subject, we must introduce it by again emphasising this point. If we consider meningitis in children as a whole, the first question which always arises before the clinician is, Is the case tuberculous, or one of the other forms of the disease?

Since our last paper, in all the cases of tuberculous meningitis in the Children's Infirmary, fourteen in number, with the exception of one we shall mention, we have been able to demonstrate the presence of the tubercle bacillus in the cerebro-spinal fluid. This fact, which has been previously demonstrated by other workers, is of such value as to make lumbar puncture not only justifiable, but an essential procedure in every case of meningitis.

Of the remaining forms of the disease, the most common which is met with in children is that due to the *Diplococcus meningitidis*. Here the diagnosis eventually depends entirely on the demonstration of the Gram-negative organism in the cerebro-spinal fluid. This in itself is of importance, but in this contribution we wish to draw attention to the recent researches of Flexner and Joblin, and the results of the serum which they have prepared for this form of the disease, results which are undoubtedly and unequivocally a very striking advance upon all other methods hitherto adopted in the treatment of cerebro-spinal meningitis.

Previous to these researches the mortality has naturally varied in different epidemics in accordance with the severity of the type; the average given by Holt* is 70 per cent. for all cases, and in children 86 per cent. In the sporadic form the mortality is somewhere approximating this figure, Dunn, in the Boston Children's Hospital, from 1899-1907, having a mortality of from 69 to 80 per cent. annually.

Flexner's published statistics from America and this country show that, taken altogether with all forms of the disease, the mortality has been reduced to 29.6 per cent., demonstrating that there can be no doubt that Flexner and Joblin's anti-meningococcic serum is a most valuable therapeutic agent. In a letter recently received from Dr. Flexner, he tells us that his serum has now been tested in 523 cases, of which 368 have recovered. These figures are large enough to place reliance on, but when those cases are examined where the serum has been administered within a reasonable time from the onset of the disease there is more reason

* 'Diseases of Infancy and Childhood,' 4th edition, p. 763.

still to consider the value of this treatment. In 172 cases where the serum was injected from the first to the third day there was a mortality of only 23·9 per cent.; in 188 cases where it was injected from the fourth to the seventh day the mortality was 28·1 per cent.; and in 155 cases where it was injected later than the seventh day, the mortality was but 39·3 per cent.

As is well known, Dr. Robb, of Belfast, in the recent epidemic gave the mortality in the cases treated without the serum as 85·2 per cent., whereas during exactly the same period of the epidemic the cases treated in hospital with the serum the mortality was 26·6 per cent.* Dunn, of Boston, reported a series of 40 consecutive cases with a mortality of 22·5 per cent. In young children the results are not so favourable: Flexner records 59 cases under two years of age with a mortality of 42·4 per cent., but even this figure compares well with Holt's series of 20 cases under one year who were treated without the serum, of which none recovered. In Flexner's tables of children under two, of 11 treated in the first three days of the disease only one died; of 11 treated before the seventh day only four died; whereas of 29 treated after seven days, twenty died—a mortality of 71·4 per cent. These figures demonstrate most clearly that in all forms of this disease, epidemic or sporadic, there is a much improved outlook when the use of this serum is available. When working at this subject in the past we were so impressed with these figures that we asked Dr. Flexner to give us the opportunity of using his method, and owing to his great kindness we have been supplied with ample quantities of the serum, which we have used at the Children's Infirmary and supplied to others who have had cases under their care. As a result of this, and with the permission of our colleagues at the Hospital, who have very kindly placed at our disposal the cases under their care and allowed us to treat them with the serum, we are in a position to publish the results of eighteen cases which we have carefully considered from every point of view, and the conclusions we have drawn therefrom.

The literature of this subject is now so voluminous and well known that we do not propose to deal with any of the interesting questions which it raises, but we will confine ourselves entirely to the serum with which this note deals. Although we have so far used only this serum, we have obtained small quantities of Ruppel's, but so far, as will be seen in the course of our note, no cases have arisen in which we are yet justified in giving up Flexner and Joblin's for this or any other form.

* 'Brit. Med. Journ.,' 1908, ii, p. 1341.

We need hardly state that in every case of meningitis or meninismus admitted to the Infirmary for Children, a lumbar puncture with the precautions we have previously mentioned is performed as soon as possible. As regards the safety of this, we may say that in the last eighteen months we have adopted this procedure on at least two hundred occasions, and not yet have we been able to observe any ill-effects which could be attributed to it. On the other hand, cases have arisen where we can unhesitatingly say that a correct diagnosis could not possibly be obtained by any other means. Four cases will illustrate the importance of this statement.

M. P—, aged 3 years, a well-nourished child, was admitted with irritability and left hemiplegia; the patient became drowsy but could be roused, and there was no head retraction. There was a right internal squint, no Kernig's sign, left plantar reflex extensor, and at the left base there were suspicious signs of lung consolidation.

The child had had a fall eight weeks previously, and had been ill for two weeks before admission. The onset, as described by the mother, was with convulsions, and there was no family or previous history of significance.

The temperature on admission was 97·8° F., later rising to 102° F. A few hours after admission lumbar puncture was performed, when the fluid, which was not quite clear, came away under increased pressure; the albumin was increased, there was but a slight Fehling reduction, and the centrifuged deposit showed a marked increase of polymorphonuclear leucocytes, of lymphocytes, and large vacuolated cells. The films showed diplococci which were Gram-negative, and a short rod-shaped bacillus which was not further investigated. Thirty cubic centimetres of Flexner's serum were therefore injected immediately, but the clinical symptoms led us to suspect the presence of a tuberculous lesion, and the further staining of the cob-web-like deposit, which later separated in the cerebro-spinal fluid by the method we have previously described, demonstrated the presence of tubercle bacilli. The child died forty-eight hours later, and at the post-mortem these observations were confirmed.

E. E—, aged 8 years, was admitted on the eighth day of her illness, having had marked pain in the head and back, and vomiting for the first three days with constipation. She had been delirious for three days before admission. During the period she was in hospital she had marked irritability with retracted abdomen, at first increased knee-jerks and Kernig's sign, and later double optic

neuritis. The temperature was irregular and varied from 99° F. to 101.4° F. at night. On admission a diagnosis of tuberculous meningitis was made, and the cerebro-spinal fluid was clear, showing polymorphonuclears and lymphocytes in about equal numbers. A few diplococci were found, and tubercle bacilli were demonstrated. Three days later lumbar puncture showed the fluid to be slightly turbid, and a few diplococci were again found in the films. On the sixth day the organism was obtained in pure culture, and proved to be Gram-negative. The patient died on the twelfth day after admission, and at the post-mortem there was general miliary tuberculosis, and, in addition, marked purulent exudate at the base of the brain and the upper portion of the cord.

In a similar case, J. F—, aged 10 months, tubercle bacilli were found and numerous diplococci demonstrated in the films but not grown. At the post-mortem similar appearances were found in the brain and spinal cord to those in another case—G. E—, aged 5 months, in whom the first examination of the cerebro-spinal fluid showed the typical appearances of meningococcic infection. The clinical symptoms gave us no indication of any other infection beyond the presence of a few rhonchi in the chest. In the fluid tubercle bacilli were not looked for, but at the post-mortem the base of the brain and the upper part of the cord were covered with thick green pus, spreading up both Sylvian fissures, in which the middle cerebral artery was thrombosed and surrounded by a dense, hard, purulent mass. Round the edge of this were numerous tubercles, which were also found on the vessels at the base after the removal of the purulent exudate. There were also caseating cervical, bronchial and mesenteric glands, and a few small tubercles on the surface of the spleen. These four cases are of extreme interest in that two of them were cases of tuberculous meningitis in children under one year of age. They also show, as has already been previously recorded by others, that the diplococcus may occur merely as a secondary infection to other forms, and demonstrate conclusively that a full bacteriological examination of the cerebro-spinal fluid is the one and only way by which a correct diagnosis can be arrived at.

In the other fourteen cases of our series the only organism thus found has been the *Diplococcus meningitidis*, and all of them have been both clinically and bacteriologically cases of cerebro-spinal meningitis. In all these cases the fluid obtained by the first puncture showed turbidity of varying degree; experience has shown, and our cases have corroborated this, that with such a fluid

the case is probably a meningococcic form, and therefore to save a second lumbar puncture the serum is used at once. So far we have always found with such a fluid that the diplococci are present both in films and culture, and on the rare occasion which may arise in which this is not the case, the one injection of the serum will not do any harm.

The serum, obtained by immunising a horse with many strains of the organism, is bactericidal and only slightly antitoxic, therefore it must be injected directly into the spinal canal, and subcutaneous injection has little, if any, effect. It is advisable therefore to use a needle when doing a lumbar puncture which accurately fits a syringe, which will hold 15 c.c., so that if turbid fluid is withdrawn all that is necessary is to warm the serum to body temperature and inject slowly into the canal after removing the fluid. As increased pressure is to be avoided it is always advisable to withdraw as much fluid as possible, and not to inject more serum than the amount of fluid removed: we usually find we can remove without difficulty 35 to 40 c.c., except when the case is in the stage of recovery, or there is marked involvement at the base of the brain by a large quantity of purulent exudate.

The fluid, as we have previously described, is turbid, contains albumin in increased quantity, reduces Fehling only slightly, and the films show polymorphonuclear leucocytes, vacuolated cells, and the organism, both intra- and extra-cellular. Cultures made by allowing the fluid to run directly from the puncture needle on to Nasagar medium rarely fail in the early stages to give a characteristic growth of the organism. Having thus arrived at a positive diagnosis the amount of serum to be used and the frequency of the dosage presents some difficulty—a difficulty which no doubt with increased experience will be remedied. The age of the patient, the symptomatology and the number of organisms present have all to be considered. Dunn, of Boston, advocates that in older children and adults four doses of 30 c.c. each should be given on successive days, and further quantities based upon the findings as observed from day to day. We have found that after the first or second injection the number of organisms is decidedly lessened, and from three to seven days after the first injection the fluid tends to become clearer, the polymorphonuclear cells lessened and replaced by lymphocytes; in some of the cases we have further noticed the organisms tend to become more intra-cellular. After about this period of time the fluid becomes clear, it no longer comes away under increased pressure, no organisms can be found and only lymphocytes of the

cellular elements; the organisms can no longer be cultured when still a few may be found in the films. The leucocytosis which is present with the disease under the influence of the serum soon disappears. These are the appearances we have noticed in the ordinary cases, but in the cases combined with tuberculous infection we have found that the fluid may be comparatively clear and yet contain diplococci; but even this is not constant, the fluid in one of these cases, at least, looking and behaving exactly like the unmixed form.

In the last four and a half months we have had the opportunity of considering fourteen cases; these have varied in age from three months to four years. Most of these would be considered clinically as belonging to the posterior-basic variety, but seeing that the organism obtained from them gave growths in every way similar to the older cases, and responded similarly to the serum as the recorded cases of epidemic form, we consider that this term, though historically of importance, is one which can now hardly be used as differentiating any particular form of the disease.

Space will not allow us to consider these cases in detail, and we will therefore speak of some of their most salient features and the effect of the serum. As seen from Flexner's statistics, it is obvious that an early recognition of the disease is the main factor in the prognosis. We have had only three early cases, the first that of J. J—, a male, aged 5 months, which was sent to the ward by our house-physician, Dr. Bernstein, whom we thank for his early recognition of the case, with a history of convulsions and vomiting on the previous afternoon, the only physical signs being rigidity of the legs in a flexed position and slight rigidity of the neck muscles. A lumbar puncture was done immediately, the fluid showing the characteristic signs. As a result of our previous experience and the age of the child, we decided to give him a small dose of 10 c.c., and not to repeat it with the frequency which has been advised in adults. The temperature, which was 101° F., became normal and remained so for thirty-six hours, then a slight rise occurred and a further dose of 7 c.c. was given the temperature returned to normal, and after the ninth day there were no signs of meningitis. He was extremely wasted, and owing to a cleft palate had to be spoon-fed. Some difficulty was found in overcoming these two conditions, but thanks to the unremitting care of the sister and nurses, the child, whom we expected to die from marasmus, eventually made a good recovery.

The dosage in young infants has not yet been arrived at, but as

the results of three or four successive cases, in which we gave 30 c.c. as an initial dose, and the total dosage up to 105 c.c., we are inclined to think that the smaller dosage less frequently repeated has given us better results. We have recently received a letter from Dr. Flexner confirming this view. This is again seen in the case of C. C—, a male, aged 3 months, who was admitted on the fourth day of the disease with typical symptoms and cerebro-spinal fluid. A dose of 10 c.c. was given on the day of admission, which was followed by a rapid improvement in the symptoms. This child, obtained so early, as a result of one small dose made an uninterrupted recovery, and in the first twelve days increased in weight from 7 lb. 7 oz. to 8 lb. 11 oz., since when he has made equally good progress to an eventual recovery.

The third case, M. L—, aged 4 years, was admitted to the Stanley Hospital under Dr. Owen, the day after a sudden fulminant onset, in a comatose condition, the limbs being limp, the conjunctivæ insensitive, and the reflexes abolished. There was no head retraction and no Kernig's sign, and great irritability. On the fourth day a lumbar puncture was performed, the diagnosis confirmed, and 25 c.c. of serum injected. The serum was repeated on the sixth, tenth, fourteenth, and nineteenth days up to a total of 130 c.c., the usual alterations in the fluid were observed, and the case ended in complete recovery. This case, therefore, had considerably more serum than the two previous ones, but two facts presented themselves to Dr. Owen and ourselves which justified the dosage, namely, the age of the child and the marked severity of the infection.

Naturally it is only within the first few days that any treatment can influence and retard the formation of the thick purulent exudate which is found at the base of the brain and along the cord in these cases. This is well illustrated in the case of J. McL—, aged 7½ months, to whom serum was given on the seventh day, and a total of 85 c.c. during the next four days. The child had to be nasally fed on the second day after admission, and remained in almost the same condition throughout, dying four days later. At the post-mortem there was the usual thick, purulent exudate over the base of the brain and cord. Here it was obvious that even by the seventh day the disease had made great progress, and treatment directed towards killing the organism was of little avail with such an amount of exudate. That the organism can be overcome even in such a case is shown by M. U—, aged 11 months, to whom the serum was first given on the fourteenth day. The symptoms, which were very severe, gradually improved, and the general condition three

weeks afterwards showed the same continued improvement. The child gained in weight, and a month after admission the cerebro-spinal fluid was fairly clear, the increase in lymphocytes was very marked, and very few diplococci could be found; moreover, cultures made on Nasgar were negative. Broncho-pneumonia supervened a week later, and the child died. There, again, at the base of the brain was found a purulent exudate, and the ventricles were much dilated. We think in this case that the marked improvement in condition, the gain in weight, and the change in the cerebro-spinal fluid show that the serum had neutralised the infective element of the disease, but the blocking at the base leading to the great dilatation of the ventricles was the mechanical result of the conditions occurring in the fourteen days before the serum was used. Had the broncho-pneumonia not arisen there is a possibility, if not a probability, that this case would have recovered, but had it done so there is little doubt that a hydrocephalus would have been present. These two cases to our mind emphasise what we have already mentioned, that if the serum continues to show the results it has shown, the question of prognosis both as regards life and the prevention of the pitiable after-conditions of these cases will depend mainly on their early diagnosis.

A comparison between vaccine and this treatment has been given us by the case of William C—, aged 10 months, who was treated in the hospital for five weeks with a vaccine, and showed at the end of that time no improvement, and was losing weight. The case, having been ill forty-seven days before serum was used, might have recovered without it, but even at this late period there was turbidity of the fluid, the cellular elements were found in excess, and diplococci were seen in large numbers. After four doses of the serum in a period of ten days the fluid became clear, and only a very slight deposit could be obtained on centrifugalisation, consisting almost entirely of lymphocytes, and no organisms could be found. Whatever the further progress of this case might have been, there is no question as to the influence of the serum upon the fluid, and the child is now perfectly well.

The others of our cases naturally varied in their manifestations, both clinical and cytological, but we may summarise them briefly, recognising that the numbers with which we are dealing are too small for us to dogmatise upon. Excluding the four cases of tuberculous meningitis with secondary meningococcic infection, our fourteen cases varied in age from three months to four years. Twelve of these fourteen were under one year, and therefore in that period

which Flexner's statistics show to be the most fatal, but in spite of this, of the fourteen cases there were seven recoveries in our series, five of which were in children under one year. We have already called attention to the only three cases which were obtained in the first few days of illness, all of which recovered, of which two were infants of only three and five months respectively. In the other cases the serum was injected from the seventh to as late as the fifty-eighth day, and therefore in some of them it is possible they might have recovered without this treatment, but even in these we have shown that the serum had a very definite influence upon the causative organism and upon the cytology of the fluid. The total amount of serum we have used in each case varied from 10 c.c. to 130 c.c., and the number of injections from one to five. As a result of these observations we wish to state that in our opinion the use of this serum in cases of cerebro-spinal meningitis which are diagnosed early promises extremely favourable results, and is worthy of the consideration of those who have to deal with this condition. Even in cases which are not diagnosed so early the serum undoubtedly favours the prognosis, and it or frequent lumbar puncture, or both combined, have in our opinion a good deal to do with the prevention of the after-conditions. Since our last communication we have had the opportunity of showing cases at the clinical section of the Medical Institution, in which repeated lumbar punctures have been performed. In these and in none of the seven recovered cases which we mention in this note is there any evidence of hydrocephalus, of mental impairment, or any of the other disabilities following this disease.

We therefore venture to think that though the numbers are small, these cases, occurring consecutively, justify us in the belief that these methods are of value both as curative agents and also as preventing the painful sequelæ which those working in children's diseases have seen with such frequency in the past as to make them on occasion regret that a recovery had resulted.

Before leaving this subject we should like to call attention to one point which we find constantly occurring in the diagnosis of these conditions, and that is the importance of examining the urine for acid and intestinal intoxications, which at times give rise to symptoms closely simulating them. The routine examination of the urine for di-acetic acid before performing a lumbar puncture is, to our mind, worthy of note.

We have again to thank Dr. Flexner for supplying us so generously with serum and for much valuable information with

regard to its use, and our colleagues at the Children's Infirmary, and to Drs. Warrington, Owen and Lepage for permission to use their cases for the purpose of this note. We have also to thank Dr. T. J. Williams for his assistance in the pathological work.

IRREGULAR UTERINE HÆMORRHAGE IN A YOUNG GIRL.

By GEORGE GIBB, M.A., M.B., C.M.,

Junior Physician, Royal Sick Children's Hospital, Aberdeen.

PROFUSE uterine hæmorrhage before the advent of regular menstruation is fortunately rare. When it does occur it may prove very serious, or even fatal. The following case is the only very severe case I have met with during the last twenty years :

D. C—, aged 14 years, a rosy-cheeked healthy girl, rather undersized and childish in appearance, with no history of hæmophilia, and with breasts fairly well developed, commenced to menstruate for the first time on March the 24th, 1909. On the first day she required to use six diapers. The flow kept steadily increasing. She at first concealed the occurrence from her mother, but soon was unable to stand and had to take to bed.

On March the 26th her mother stated that she passed about half-a-dozen large clots of blood, in addition to much fluid blood ; in a day's time losing more than she herself was in the habit of losing over her whole period.

On March the 27th I was called to attend. On this day she had lost ten large clots, moulded to the shape of the vagina, besides a large amount of fluid blood. She was very weak, and intensely anæmic, the gums being white and waxy, and the pulse-rate 150. She was unable to move in bed without feeling faint, was restless, and kept sighing. Ergot was administered by the mouth, but was promptly rejected. Food was still retained, however. Chloroform was administered, and the vagina plugged with strips of gauze wrung out of vinegar. The vagina was patulous ; the body of the uterus felt very small bimanually ; there was no cervix, there simply being a small os, with a slightly raised edge round it on the roof of the vaginal wall, as far up as the examining finger could conveniently reach.

March the 28th.—Hæmorrhage has been in the main controlled during the night by the plugging, micturition, however, bringing it

to a certain extent through or past the plugs. Since yesterday she has not been able to retain food of any kind owing to sickness. The temperature in the evening of this day was 100° F., and as she began to complain of discomfort in the lower part of the abdomen the plugs were withdrawn, the vagina douched out with biniodide, and plugging with sterile gauze was renewed under light chloroforming.

March the 29th.—The patient still kept no nourishment in the early part of the day. She was very faint and pallid. The hæmorrhage, however, was much less; pulse-rate 135. Ergotinine citrate $\frac{1}{100}$ gr. was injected into the buttock, and a normal saline injection administered by the bowel. The plugging was renewed under chloroform after an antiseptic douche had been administered. In the later part of the day a little liquid nourishment was retained.

March the 30th.—The patient had some sleep during the night. The pulse-rate is down to 126. Nourishment is being kept in small quantities. No hæmorrhage is visible.

March the 31st.—The plugs were finally removed under chloroform, and the vagina douched with biniodide of mercury lotion. The patient is making a good recovery.

June the 1st.—The patient now is in excellent health and has not again menstruated.

The necessity for the frequent use of chloroform during the manipulations was, in presence of the intense anæmia, somewhat unfortunate, as it tended to accentuate the sickness. The tender age of the patient, however, rendered an anæsthetic essential. As regards the particular anæsthetic used, a large experience in the administration of chloroform in a sick children's hospital has produced in me the conviction that it may be given to children, even in very weakly conditions, with a high degree of safety, provided it is very lightly administered. Whatever may hold for adults, the danger in the case of children I have almost always found to be that of overwhelming with too large a dose.

NOTES ON INTUSSUSCEPTION.

By CHARLES P. B. CLUBBEE,

*Consulting Surgeon to the Royal Prince Alfred Hospital, Sydney ;
Senior Hon. Surgeon to the Royal Alexandra Hospital
for Children, Sydney.*

WE now meet with cases of intussusception more frequently than we did a few years ago, and with this increase in the number of cases it is gratifying to find that there is great decrease in the mortality.

At the Royal Alexandra Hospital for Children, Sydney, during 1908 thirty-three cases of intussusception were admitted, and there were only two deaths.

During the last twelve months I personally have had twenty-six consecutive cases of intussusception under my care without a death. In twenty-five cases the abdomen was opened. In one the intussusception was reduced by an injection while under an anæsthetic.

To judge by the reports that appear in the journals, the results obtained here are better than those obtained in many other places. This must be largely due to the fact that we get the children in the early stages of the obstruction.

In my last series of fifty cases (excluding two of the chronic type, said to have been ill a week) the longest time from the onset of symptoms to the time of operation was fifty-three hours and the shortest was two hours—average seventeen hours.

We seem to have educated our medical community in this matter, and convinced them of the extreme importance of never missing a case of intussusception at the first visit. The surgeon is entirely dependent upon the general practitioner for the stage at which the case reaches the hospital, and if in any given locality the majority of intussusceptions are sent in late, then, through no fault of the surgeon, the mortality will continue to be high.

Dr. A. N. McGregor (1) says: "The time has come when intussusception must be regarded as a condition having definite symptoms and signs, capable of being diagnosed in the early stages, and requiring surgical treatment at the earliest possible moment. The pathologist has always been interested, and has carefully mounted his specimens and given them a prominent place in his museum. The surgeon has keenly treated such cases as were sent to him, and has exhibited his successes with pardonable pride, for the material was in most cases unpromising. The general practitioner should be

as keen and alert as either of these. The responsibility of early recognition rests with him, and as the element of time is probably the most important factor in the determination of success or failure, that trust is no light burden."

But so long as the writers in the various text-books, under the head of "symptoms," continue to describe the condition of the child as it would appear thirty-six or forty-eight instead of six hours after the onset of the invagination, so long will inexperienced men have a difficulty in making an early diagnosis. In their student days they may have heard a clinical lecture on this subject, but in all probability most of the time was devoted to ætiology, anatomy, pathology, and very little, if anything, was said that would in any way aid them in making an early diagnosis. How can we be surprised that men so taught should expect to find every case of intussusception in an extremely serious condition. So when the case is brought to them, the story told by the mother, plain though it be, does not put them on their guard. They are deceived by the appearance of the baby; they cannot believe that a child with apparently so little the matter with it can be suffering from intussusception. The child is prescribed for and sent home. The diagnosis is made some twenty-four hours later, when all the "classical" symptoms are present.

The treatment of intussusception is laparotomy. But even at the present day when writing on this subject men continue to compare the treatment by irrigation with the treatment by laparotomy. Nothing can be more absurd. "The measures," as Jonathan Hutchinson remarks, "are not competitive, but one is supplementary to the other."

Up till quite recently I was in the habit of using an injection as a preliminary step in every case of intussusception, the child being under the anæsthetic on the table, with everything ready for the operation. In only 16 cases out of 160 was reduction effected by this means. My reasons for using injections were these: In a certain small proportion complete reduction might be effected, which meant a good deal in the days when the mortality was high. Then the injection nearly always reduced the mass to a considerable extent and thus lessened the subsequent manipulation. Recently I have altered my method, by omitting the injection and proceeding at once to the abdominal section. The mortality is now so low, and manipulation of the intestines carefully carried out is not harmful, that it seems hardly worth while to waste time on a procedure from which so little benefit can be derived.

Dr. Henry Dunbar (2), in his very able paper, gives many sound reasons against the employment of injections at any stage. I think the time has come when injections, even as a preliminary step, should be abolished in hospitals, or in any place where skilled surgical aid is at hand, and should be used only in out-of-the-way districts or places where for some reason or other it is impossible to operate.

The incision should be in the middle line when the mass is in the middle or to the left side of the abdomen, and through or just at the outer border of the right rectus in those cases when it is on that side of the abdomen. I now make my incisions much larger than I did formerly when in the middle line, the umbilicus being the centre of the incision. The advantages are many, and the results show that there is no additional risk. It is often very hard to decide how much pressure should be put on, and how long the squeezing process should be continued in a case that is difficult to unfold. A case that at one time appears hopeless may give way under continued pressure, and even with the peritoneum torn in several places the child may recover; therefore we must not be too ready to stop directly we meet obstruction. But the time comes when it is obvious that reduction cannot be effected, and that even if it is, resection must take place because of the damaged, probably gangrenous, condition of the gut. In these cases the shock is always very considerable and must be taken into account. If too much time has been spent on vain attempts at reduction, the child will be in a very poor condition to stand a resection should it be necessary.

The following case is a good illustration of this condition. After the intussusception had been reduced with somewhat prolonged pressure it was found to be gangrenous. At this stage the shock was profound and it was evident that the operation must be terminated quickly; I therefore resected and put in two Paul's tubes. Hector H—, aged 6 months, admitted to Children's Hospital on April the 28th, 1908, thirty hours after onset of symptoms. Ill since early yesterday morning, 12.30 a.m. Cried suddenly, vomited soon after. Given oil; passed two motions very offensive. Blood passed 10 p.m., twenty-one hours after onset of symptoms. Given hypodermic injection of morphia gr. $\frac{1}{30}$. Large tumour felt on left side of abdomen. Enema given without altering position of tumour. Abdomen opened in middle line. Intussusception found in sigmoid flexure; the last part reduced with great difficulty by manipulation, peritoneum tearing in several

places. When nearly reduced cæcum was found to be gangrenous and stinking. The cæcum and several inches of ascending colon were then removed; Paul's tubes were fixed in ileum and colon. The child suffered much from shock. For the first twenty-four hours, as it vomited the breast-milk, it was fed through the Paul's tube with small quantities of Benger's food. The tubes came out on the second day. The child was kept on the breast, and gradually began to pick up. For some weeks there was considerable difficulty with the wound and surrounding skin, which was much irritated. The skin recovered itself and the wound healed up with the exception of the two small openings into the bowel. On July the 15th, 1908, the child being in good condition, I was able without any difficulty to make an end-to-end anastomosis. I inserted small oblong pieces of sponge into the openings and kept them in until everything was free and ready for the anastomosis. The abdomen was closed with through-and-through silkworm-gut sutures. Beyond vomiting occasionally for a few days the child had no bad symptoms. It quickly picked up, got fat, and was sent home well in a few weeks.

Mr. Arthur Edmunds (3) has suggested a most ingenious method of dealing with cases when it is necessary to resect, by means of a specially constructed Paul's tube, made with a groove to fit over his enterectomy forceps. The great advantage of this method is that it obviates the skin irritation that always follows the use of the ordinary Paul's tubes. The chief objection to my mind, from a practical point of view, to the use of this tube would be the great difficulty of arranging the dressing to prevent the tubes being dragged out. This difficulty Mr. Edmunds recognises when describing the best way to apply the dressings.

Dr. Henry Dunbar (4), in dealing with the varieties of intussusception, says that the ileocæcal comprise the very large majority of the total number of cases, and quotes Leichtenstern, who puts ileocæcal at 44 per cent., but says that he thinks Holt is probably more correct when he places the ileocæcal variety at 74 per cent.

In this matter he is in error. Old statistics cannot be relied upon, because formerly all intussusceptions involving the cæcum were called ileocæcal, and no attempt was made to differentiate the various forms. Those commencing at the caput cæci, which we now call cæco-ileocæcal or colic-ileocæcal, were not distinguished from those commencing at the valve, and both were called ileocæcal.

In the 157 cases I have operated upon so far:

50	were	cæco-ileocæcal	.	.	or	32·05	per cent.
46	„	ileocæcal	.	.	„	29·4	„
28	„	enteric-ileocæcal	(double)		„	17·8	„
15	„	ileocolic	.	.	„	9·7	„
14	„	ileocolic-ileocæcal	(double)		„	8·9	„
3	„	colic	.	.	„	1·9	„
1	„	enteric	.	.	„	0·6	„

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This table shows that the double variety (excluding the cæco-ileocæcal which some people call double) is common, and may be expected in 27 per cent. of the cases.

Intussusception of the appendix is not often met with. I have only seen one case, and that was under the care of my colleague, Dr. E. H. Binney (5). The child was aged 2 years; it had occasional attacks of pain and vomiting; a tumour could be felt from time to time, but there was no intestinal obstruction. At the operation the mass was found in the transverse colon and was easily reduced to the cæcum. The walls of the cæcum were swollen and would not unfold. As the mass could not be reduced Dr. Binney resected the ileocæcal region, and made an end-to-end anastomosis. When the excised cæcum was examined it was found to contain an inverted appendix, and this had evidently caused the intussusception of the colon. The child made an uneventful recovery.

Dr. P. L. Hipsley (6) in his paper on "The Ætiology of Intussusception," suggests that hypertrophy of the lymphoid tissue at the lower end of the ileum may often be the starting-point of the enteric variety of intussusception. I think that this is probably true, because we know that when an intussusception begins in the ileum a few inches from the cæcum, the starting-point is always at the side of the bowel and opposite to the mesentery, and this is the situation where this hypertrophied lymphoid tissue is found. This point in the ætiology is worth noting, since all the double varieties start in the ileum, and they form 27 per cent. of the total number of cases.

I have now had under my care 173 cases of intussusception, 157 laparotomies, 16 reduced by injection. Of those operated upon, first 50, 25 died—mortality 50 per cent.; second 50, 12 died—mortality 25 per cent.; third 50, 4 died—mortality 8 per cent.; last 7, no deaths.

REFERENCES.

- (1) 'Scot. Med. and Surg. Journ.,' August, 1906.
- (2) *Ibid.*, August, 1906.
- (3) 'Practitioner,' 1908, vol. i, p. 367.
- (4) 'Scot. Med. and Surg. Journ.,' August, 1903.
- (5) 'Austral. Med. Gaz.,' July, 1908.
- (6) *Ibid.*, July, 1907.

Philadelphia Pediatric Society.

REGULAR MEETING, May the 11th, 1909, J. CLAXTON GITTINGS, M.D.,
President.

Polyarthritis following Tonsillitis.—Dr. ARTHUR NEWLIN showed a pale boy, aged 11 years, who came to the Orthopædic Hospital on account of pain and stiffness in his knee-joints. Dr. M. J. Lewis has kindly permitted Dr. Newlin to show him. Family history is negative. Except for scarlatina at three years, he has always been well until a slight cold about a year ago, at which time the cardiac murmur was first noted. In December, 1908, he had an attack of tonsillitis lasting one week. He was apparently well for two weeks, then developed joint pains, first in the lumbar spine, then in the knees, which were swollen, stiff, and painful, without tenderness, heat, or redness. He complained not so much of pain as of inability to get about. The back became better, but the knees showed little improvement. His anæmia is more apparent than real: Hæmoglobin, 80 per cent.; erythrocytes, 4,600,000; and leucocytes, 8000. The tonsils are enlarged, as are submaxillary and inguinal glands; other superficial lymphatics are not enlarged, nor is the spleen palpable. Cardiac dulness is increased, and there is a blowing systolic murmur at the apex transmitted into the axilla. The knees are swollen and painful, with no tenderness or redness of the joints. Decided swelling of the metacarpo-phalangeal joints of both index fingers, fusiform and painless, is noted. He had noticed nothing abnormal about his hands, except that they were weak. There was distinct atrophy of the interossei muscles of both hands. An X-ray shows no change in the bones. It seems evident that the polyarthritis was caused by an infection through the tonsils.

Still's Disease.—Dr. NEWLIN also showed a boy, aged 15 years, native of the hilly country of Huntingdon County, Pennsylvania. His mother and one brother have goitres. He has always lived in a dry house. He had had attacks of rheumatic (?) pains in his legs, but was never laid up until August, 1907, when his joints swelled, the left ankle first becoming painful, red, and swollen, and the joint stiff. Two months later the right elbow was affected. At present, twenty-one months after onset, both ankles, both knees, the right elbow, both wrists, and all fingers are affected. He is in the Pennsylvania Hospital. Dr. C. D. Hart has allowed Dr. Newlin to show him. He is pale and emaciated, unable to stand on account of the swelling and stiffness of his knees and ankle-joints. The submaxillary, epitrochlear, and inguinal glands are enlarged, the epitrochlear feeling as large as large

peas. The spleen is palpable two fingers' breadth below the costal margin. The joints of both ankles and wrists are ankylosed, as is the right elbow; the knees are partially so. The joints of the first and second phalanges of both hands are stiff, and show a fusiform swelling; the other joints affected are likewise swollen and puffy. There is no redness, pain, or tenderness in any joint, but some bony grating at the wrist articulations. Arms and legs are semiflexed, and efforts at extension are painful. The hips, shoulders, and right elbow are unaffected, and the articulations of the jaws have also escaped. Radiographs show a porosity or rarefaction of the bones in the articulations involved, but there is no grooving or lipping. Blood-count shows: Hæmoglobin, 76 per cent.; erythrocytes, 5,000,000; and leucocytes, 10,500. Of the latter, 65 per cent. are polynuclear, 25 per cent. mononuclear, 7 per cent. transitional, 1.5 per cent. eosinophiles, and 1.5 per cent. unidentified. Both Moro and Wasserman tests were negative. An epitrochlear gland has been removed for examination.

Dr. J. T. RUGH mentioned that he had seen a number of similar cases, intensely interesting from the standpoint of ætiology. Both of these cases illustrate the newer ideas of the toxic character of arthropathies. The first case had a tonsillar infection; the second resembles four others which he had seen in ten years, in all of which there was a primary tubercular infection in the epiphysis of one of the long bones in the large joints. This disappeared and a polyarthritides developed. In his last case all the joints of the body are involved and the condition resembles arthritis deformans. In the treatment of these cases he had followed out a series of cases on fluid extract of bryonia and grindelia robusta, running them up alternately to the point of tolerance. In only one case, an old man over seventy, did improvement follow. His best results have followed pure tincture of iodine, given in drop doses an hour before or two hours after meals, also run up to the point of tolerance. In some cases of polyarthritides and arthritis deformans he has given as much as ten to fourteen drops of tincture of iodine.

Dr. NEWLIN said that in the first case salicylates were first tried without benefit; but there has been a steady improvement under syrup of the iodide of iron, together with the ichthyol externally. In the second case iron is given internally and the affected joints are baked. There has been little change, but the patient has been made more comfortable.

Leukæmia.—Dr. J. C. GITTINGS showed a boy, aged 8 years, who was admitted with a history of weakness, anorexia and headache for four months. Blood examination showed high-grade anæmia, 6500 leucocytes, but 24 per cent. myelocytes in a differential count. The spleen and liver were enlarged. Frequent subsequent blood-counts showed a gradual rise in the leucocytes to 40,000 and in the myelocytes to 40 per cent., followed by a gradual fall to normal within four weeks and a steady rise in the hæmoglobin and red cells coincident with marked improvement in the general health and disappearance of all symptoms. As the blood picture permitted a diagnosis only of leukæmia the further course of the case will prove of great interest. The boy also showed slight loss of power with increased reflexes and clonus in the right arm and leg. The explanation of this is not clear.

Tuberculosis and Syphilis.—Dr. GITTINGS also showed a girl, aged 1 year, admitted to the University Hospital for paralysis of the left sixth and seventh cranial nerves and weakness with increased reflexes in the right arm

and leg. The apex of the right lung showed consolidation and râles, and the sixth examination of the sputum showed tubercle bacilli. The von Pirquet tests were negative, while the Wasserman reaction was distinctly positive. Lumbar puncture failed to obtain more than three or four drops of fluid. As the paralysis had appeared suddenly and had improved slightly on anti-syphilitic treatment, a diagnosis had been made of tuberculosis of the lung and cerebral syphilis.

Dr. ALFRED HAND, jun., asked whether the first case could not be syphilitic. The boy does not look like a case of hereditary syphilis, but perhaps the presence of syphilis, as in a case reported by A. O. J. Kelly, has kept the ordinary symptoms of leukæmia in abeyance. He believes that leukæmia may occur without leucocytosis. The second case he also considered syphilitic rather than tubercular. The eye findings could, of course, be due to either, but are more likely syphilitic.

Dr. GITTINGS said that syphilis in the case of the boy had been considered, but in the absence of any other luetic symptoms and because of the marked improvement of the blood findings on arsenic, the therapeutic test had not seemed justifiable. Opportunity for the Wasserman test had only recently become available, but would be employed.

Decapsulation of Both Kidneys for Acute Nephritis.—Dr. E. B. HODGE showed a girl, aged 5 years, admitted to the Children's Hospital in June, 1907. (Edema had been noticed ten days before, first under the eyes, then in the feet, legs, abdomen, arms, and hands. Ascites was present, and the urine, six to ten ounces daily, contained albumin, hyaline and granular casts. On medical treatment she was worse at the end of eight weeks. On August the 12th, 1907, decapsulation of both kidneys was done. Both were enlarged, the right more so, and deeply congested. It was impossible to deliver the kidneys on account of the depth of the incisions through the cedematous tissues of the back. Incisions were closed in layers by a few sutures, loosely tied, without drainage. In spite of this the stitches cut and the wounds opened wide, with subsequent infection and prolonged suppuration. Operation took thirty minutes. The patient was very ill for some time. In three days the urine reached fifteen ounces daily, and in two weeks averaged twenty to twenty-five ounces. (Edema was less in one week and decidedly less in two weeks. By the end of three weeks she was nothing but skin and bone. Her convalescence was further retarded by gonococcal vulvo-vaginitis. At the end of a month she was sent to the country, and in three months discharged with incisions healed. She has been perfectly well ever since, and a specimen of urine obtained within the week shows no albumin or casts. There is not a trace of edema. Dr. Hodge showed her as a late result of double renal decapsulation for acute nephritis nearly two years ago. The two patients operated on by Dr. J. P. Hutchinson and shown by Dr. C. H. Weber in 1906 are both alive and well, but have albumin in the urine. These three are the only cases on whom this operation has been performed at the Children's Hospital.

Dr. GITTINGS said that it is extremely important to determine the exact value and applicability of Edebohls' operation so that every contribution to the subject is of great interest. The helpless attitude of the physician to so many of the nephritic cases is the strongest plea for the final decision on the operative treatment.

Dr. HODGE added that, while there had been three cases in the Children's Hospital with three recoveries, the mortality in a large series of cases must

be far greater. Nevertheless, the operation is to be recommended in suitable cases. In answer to Dr. Elmer's questions, Dr. Hodge said that the kidneys had been operated upon consecutively by one operator, not simultaneously by two operators. The shock and the anaesthesia both helped to diminish the amount of urine secreted immediately after operation.

Dr. LEFEOWITCH said that the child reported by Dr. E. E. Graham in 1906 is still alive and well.

Interesting Dermatological Cases.—Dr. C. J. HUNT, by invitation, reported the histories of two cases of a somewhat similar bullous eruption, appearing at the tips of the fingers in a boy aged 7 years and a girl aged 10 years. Both children had a history of urticaria.

Dr. F. C. KNOWLES suggested that one of the cases resembled somewhat the history obtained in a rare disease, epidermolysis bullosa, but if the patient had had that condition other traumatic lesions would have appeared before the present attack or subsequent to it. The traumatic element described probably had nothing to do with the appearance of the outbreak. The cases would suggest several diseases, at times bullous, impetigo contagiosa, urticaria, erythema multiforme or even beginning cheiropompholyx. With the limited distribution and unusual history the classification is extremely difficult.

Société de Pédiatrie, Paris.

April the 20th, 1909.

Sudden Death in a Syphilitic Infant: Lesions of Glands.—MM. TRIBOULET and RIBADEAU-DUMAS related the case of an infant, the subject of congenital syphilis, having recent papular eruption on the face and lower extremities, and who died suddenly. A clinical examination made a short time previously gave no indications which would have foreseen such an event. Autopsy: marked changes in the thyroid, para-thyroids, hypophyseal glands and suprarenals, consisting of specific lesions with hæmorrhagic infarcts. Heart, lungs, and brain seemed normal.

Congenital Laryngeal Stridor.—M. NATTAN reported the case of a child who had laryngeal stridor the day after birth, increased by dorsal decubitus and lessened by lateral decubitus. There were neither adenoids nor bronchio-tracheal adenopathy to account for this marked symptom. Hypertrophied thymus was suggested. The case was interesting, inasmuch that at the age of six weeks the stridor suddenly disappeared.

M. VARIOT was inclined to account for similar conditions by nervous lesions, and quoted the case of an infant in his clinic in whom the stridor disappeared equally suddenly, and who had paralysis of one vocal cord, which had been observed by a laryngologist. In true laryngeal stridor, due to malformation of the ary-epiglottic folds, the inspiratory stridor disappears gradually, and only ceases definitely after the end of the first or second year, and sometimes even later.

A Case of Choreic Psychosis.—M. NATTAN related the case of a young girl, aged $7\frac{1}{2}$ years, who, during an attack of chorea, was seized with complete psychic depression, without stupor. The mental troubles persisted a long time after the chorea had disappeared. Intelligence gradually returned, and the child eventually became perfectly normal.

Pulmonary Hydatid Cyst.—M. RAOUL LABBÉ read notes of the case of a child, aged 8 years, seen for repeated febrile attacks with diffuse bronchitis. Influenza was suggested as a cause, but gradually factor of the breath supervened, and an area of dulness became apparent over the left lung, and a diagnosis of pleuro-pneumonia was made. By radioscopy an opacity was seen over the upper third of the left lung. Exploratory puncture drew off non-characteristic fluid. The child was then seized with severe pain in the side, and immediately afterwards vomited a considerable quantity of foetid purulent fluid, in which hydatid hooklets were found. After the vomiting signs indicative of a cavity made their appearance. Cure resulted.

M. NETTER had noticed suffocative accidents happen after exploratory puncture; the association of these cysts with pneumonia was very frequent.

M. HUTINEL had observed the case of a girl, aged 10 years, suddenly seized with hæmoptysis, with moist râles and signs of a cavity. In view of the rarity of tubercular lesions of this kind at that age, he examined the expectoration and found hydatid membranes. Cure resulted. In another case the onset resembled a pneumonia of the left side; the child died, and at the autopsy two suppurating hydatid cysts were found, one on the right and the other on the left side.

Cerebro-Spinal Meningitis treated by Anti-meningococcic Serum.—M. TERRIEN showed a child who was attacked. Lumbar puncture performed by aspiration drew off a purulent fluid. The condition improved, and after injection of 15 c.c. of serum cure resulted.

M. NETTER advised, when aspiration was attended with any difficulty, to blow some sterile air into the needle, or to inject some artificial serum into the spinal canal. He had treated nine infants under one year, with four recoveries. From one to two years the percentage of deaths was 40 per cent.; after two years there were 70 per cent. of cures. He was in favour of the method practised in Germany, which consisted in injecting for three consecutive days doses of serum varying from 20 to 30 c.c., without regard to the temperature, which is notably irregular.

M. COMBY did not advise injecting such large doses so frequently. He had obtained cures after one or two injections of 10 c.c.

M. HUTINEL had five cases, with four recoveries, and noticed a rapid improvement from the use of serum, the cerebro-spinal fluid clearing rapidly. As to subsequent rises of temperature, he regarded them as due to the serum. In certain cases a tubercular meningitis might co-exist with another microbic variety, giving a purulent appearance to the fluid. In these circumstances a lymphocytosis is found.

VINCENT DICKINSON.

Abstracts from Current Literature.

Medicine.

Male characteristics developing in a girl (*Med. Press,* January 20, 1909).—**Thummin**, at the Medizinische Gesellschaft of Berlin, reported the case of a girl, aged 17 years, who first menstruated at the age of fifteen, but not again. At that period a luxuriant beard began to develop; hair also grew on the breast and on the linea alba, and the voice became deeper, but the figure remained feminine. The external genitals were those of a female, the uterus was normally developed, and the ovaries could be plainly felt under an anæsthetic as small hard substances. The girl died from sepsis commencing in a paronychia. The autopsy showed well-developed mammae, female genitals and a feminine pelvis. The ovaries were small and hard without any trace of ovulation. The right supra-renal body contained two brown nodules, and the left was converted into a tumour as large as a man's fist, which proved to be a struma supra-renal. The thyroid was enlarged, but the hypophyses were not. The case was, therefore, one of atrophy of the germ glands with hypertrophy of those of the vascular system.

T. R. WHIPHAM.

Neuro-fibromatosis (*Med. Press,* December 23 and 30, 1908).—**Exner**, at the Gesellschaft der Aerzte of Vienna, showed a boy, aged 7 years, who from infancy had a large swelling on the lower jaw, which had gradually increased in size till it now reached to the lower orbit and behind the ear. Below the left ramus of the lower jaw a stringy tumour could be felt, extending forwards to the right ramus, upwards and backwards as stated, and downwards as far as the clavicle. Clinically, the tumour was diagnosed as a fibroma, but from its origin and pigmentation, as well as from its peculiar form, it was finally decided that it belonged to that class of tumours which Recklinghausen termed "neuro-fibromatosis." At the same Society **Haberer** showed a similar case in a female, aged 20 years. From the left side of the face there hung a small bag-like tumour, which, being attached to the angle of the mouth, drew it backwards, giving the patient an extraordinary appearance. A second tumour was situated on the left upper eyelid, which prevented the movement of the eye and had damaged the bulb. Both tumours were painless, and according to the history had been observed at birth, but during life had gradually increased in size. Covered with hair another good-sized tumour was found over the parietal and temporal bones, with an indented or crateriform surface. On closer inspection a defect about the size of a gulden was found between the two bones. The whole of the lower jaw on the left side as well as the soft palate were greatly thickened. The pigmentation of the tumours was diagnostic of the disease.

T. R. WHIPHAM.

Tremor of childhood (*Med. Press,* December 23, 1908).—**Zappert**, at the same Society, exhibited a child, aged 2 years, who had just recovered from apical pneumonia in the right lung. About eight days after the pneumonia had commenced tremors began in the left extremities, there being no fever or other abnormal phenomena to account for this unusual invasion. After continuing for three weeks the symptoms began to disappear, but even now there were remnants of this morbid condition to be observed. The

author related the histories of a few other cases, and thought that these tremors were the initial symptom and guiding index of tubercular meningitis or tubercle in the brain, or the prodroma of encephalitis. They must be distinguished from the trembling and shaking of infants, which is known by the term "acute cerebral tremor of early childhood," and is not so important.

T. R. WHIPHAM.

Paralysis of the right facial nerve ('*Med. Press,*' December 23, 1908).—**Friedjung**, at the same meeting, demonstrated a total paralysis of the right facial nerve in a child, aged 7 months. The paralysis appeared suddenly, accompanied by fever, which lasted for three days. The eyes and ears remained quite normal. Electrical tests gave distinct degenerative reaction. Friedjung thinks that this facial paralysis is another form of poliomyelitis anterior acuta, as it is ushered in with fever, and occurs with other epidemics like poliomyelitis. Escherlich, who had had similar cases, concurred in this opinion.

T. R. WHIPHAM.

Treatment of whooping-cough by chloroform inhalation ('*El Siglo Médico,*' October 31, 1908).—**Arquellada** recommends that the dosage be regulated, 1 grm. being employed in the first minute and thenceforth $\frac{1}{2}$ grm. every two minutes. Complete anæsthesia is not required; there should be muscular relaxation without abolition of the corneal reflex. Ten minutes was the shortest time advisable for the administration; he finds that with longer periods of inhalations the cure is most rapid. He relates four cases of well-pronounced whooping-cough which had lasted from ten to fifteen days and were of unusual severity. One child had no further attacks of coughing after the inhalation; the second had four very slight attacks; the third, whose twenty-two fits of coughing a day were reduced to ten the day after, four on the third day, and in ten days to none; the fourth child, who was having thirty severe attacks before the inhalation, was completely cured in one sitting. He believes that the chloroform acts as a germicide, destroying the bacillus of Bardet found in the respiratory tract.

M. D. EDER.

Treatment of stammering with special relation to respiratory exercises ('*Inter. Col. Med. Journ.,*' November 20, 1908).—**Leary** regards the primary cause of stammering as want of co-ordination between the breathing muscles and oral muscles. The general health should have careful attention, and from personal experience the writer believes segregation is essential in bad cases; public school should be prohibited. Respiratory exercises and vocalisation require about three hours a day; the exercises are at first directed towards controlling the breathing and are followed by deep breathing exercises. These must be slow and rhythmic. Diaphragm drill and exercises in vocalisation must be carefully carried out.

M. D. EDER.

Case of scarlatinal meningitis; recovery ('*Inter. Col. Med. Journ.,*' December 20, 1908).—**Frost** saw the child five weeks after the fever with distinct symptoms of meningitis; Kernig's and Babinski's reflexes were obtained; there was optic neuritis and nystagmus. The mother had noticed a squint in second week of illness, and towards the end of the sixth week a condition of apathy set in followed by Cheyne-Stokes' respiration, which lasted four days. Two months later recovery was complete; strabismus, nystagmus, and optic neuritis had disappeared.

M. D. EDER.

A case of Henoch's purpura (*The Austral. Med. Gaz.*, December 21, 1908).—**Howle** saw a boy, aged 8 years, with severe abdominal pains, melæna, vomiting, and a purplish rash on legs, arms and chest; about umbilicus a distinct tumour was palpated. The pains were frequent and severe. Both elbows, knees, ankles, and left sacro-iliac joints were swollen, painful, and full of fluid. Blood condition was that of a secondary anæmia. Coagulation time 4·5; the control being 3·1. No great improvement having resulted, removal of post-nasals was performed by other advice. The patient died some fourteen days later. Howle queries the advisability of performing any such operation when the condition is so serious.

M. D. EDER.

Infantile mortality in puerperal eclampsia (*La Semana Medica*, December 17, 1908).—**Dominguez** gives the following statistics gathered from 6012 maternity cases treated at Rawson Hospital, Buenos Aires. There were 71 cases of eclampsia. Thirteen live infants were delivered naturally, and 24 by operation; 19 were born dead during spontaneous labour or during operation; 3 eclamptics were sent home cured before delivery. This gives a viability of 54 per cent. and mortality of 28 per cent., with 18 per cent. of cases in which the result to infant was unknown.

M. D. EDER.

Results of the care of infants' life (*Ergebnisse der Säuglings fürsorgl.*).—**Keller** publishes the first number of this journal. It deals with the prevention of infantile mortality from both the medical and social side. One section is devoted to questions which Keller regards as settled, another to unsettled questions, such as milk depôts, public control of the milk, etc. There is an extremely valuable bibliography of the literature of the last six years concerning infantile mortality and all the subjects that impinge on it.

M. D. EDER.

A case of astasia-abasia in a girl of ten (*Gaz. des Hôp.*, October 8, 1908, p. 1371).—**Babonneix** reports a case of this nature of several months' standing. The onset had been accompanied by much pain. As in so many cases of hysteria in children this one was monosymptomatic; no other sign of hysteria was present. The symptom was removed after two days' treatment by suggestion and isolation. The diagnosis is shortly discussed and abstracts of several previously recorded cases given.

ERNEST JONES (Toronto).

Congenital unilateral facial paralysis and bilateral external ophthalmoplegia (*Gaz. des Hôp.*, November 5, 1908, p. 1565).—**L. Babonneix** and **P. Harvier** describe a case of this nature in a female infant, aged 1 year. It was the only child in the family. The symptoms were noticed immediately after birth, which had been a normal one. These consisted in a complete peripheral facial palsy on the left side, and paralysis of the external rectus with both oblique muscles on both sides; in addition was found congenital atrophy of the choroid on both sides. A short bibliography and three photographs accompany the article.

ERNEST JONES (Toronto).

Family hæmophilia (*Gaz. des Hôp.*, October 27, 1908, p. 1471).—**P. Emile Weill** and **Boyé**, at a meeting of the Soc. Méd. des Hôp., gave an

account of a family of thirty-nine members, twelve of whom showed hæmophilic signs. There had been no fatal case in the family. Three members submitted to a blood examination. The same changes were found as occur in the female members of the common type of hæmophilic family, namely, slight delay in coagulability, imperfect contraction of the clot, etc. We have here, therefore, a benign type of hæmophilia that may be contrasted with the usual one.

ERNEST JONES (Toronto).

The reaction of the cerebro-spinal fluid in the course of some dermatoses of young infants (*Gaz. des Hôp.*, November 10, 1908, p. 1539).—**Ravault** has recently shown that the lymphocytosis so often found in the cerebro-spinal fluid of heredo-syphilitics varies in intensity with the extent of the skin lesion. **Marcel Ferraud** in this article shows that the same sign may also be found in non-syphilitics. He has examined the cerebro-spinal fluid at least once in each of 120 cases of infantile dermatosis, including 47 cases of lenticular erythema, 25 of vesicular and ulcerative erythema, 12 of prurigo, etc. He finds that lymphocytosis is not present in such cases, but that it may sometimes occur to a decided extent in cases of prurigo and of lenticular erythema—apparently non-syphilitic.

ERNEST JONES (Toronto).

The modern babies' dispensary (*Arch. of Pediat.*, 1908, p. 561).—**H. J. Gerstenberger** describes the infant milk stations in Europe, and gives an interesting account of the work done at the babies' dispensary in Cleveland.

J. D. ROLLESTON.

Measles in utero (*Boston Med. and Surg. Journ.*, vol. 1, 1908, p. 436).—**Nathaniel R. Mason**.—A primigravida, aged 18 years, was admitted to hospital with typical measles. Eight days later she was delivered by forceps of a child who showed mottling of the skin over the whole body and branny desquamation of the chest and axillæ. Traces of desquamation persisted till twenty days after birth. Mason regarded the desquamation as evidence of measles and not as normal exfoliation of the skin, which does not begin till the fourth day and is finished in from ten to fourteen days. A review of the literature follows (*cf. BRITISH JOURNAL OF CHILDREN'S DISEASES*, 1907, p. 119).

J. D. ROLLESTON.

An exception to Colles's law (*Bull. de la Soc. franç. de Derm. et de Syph.*, 1907, p. 404).—**Gaucher**.—A woman, aged 23 years, was admitted to hospital with two typical hard chancres of the right breast, considerable axillary adenopathy and a roseola. She was accompanied by her child, aged nine months, who, in addition to a polymorphic eruption, presented mucous tubercles on the lips, which had developed one month before the mother's chancres. The disease in the child's case was undoubtedly congenital. At birth it had shown palmar and plantar pemphigus, and at six months had suffered from sero-purulent coryza and nasal obstruction. It had never been confided to a strange nurse. Under specific treatment considerable improvement occurred in both mother and child. **Fournier**, in the subsequent discussion, drew attention to the rarity of exceptions to Colles's law, and stated that he had never met with a case.

J. D. ROLLESTON.

Epidemic cerebro-spinal meningitis (*Arch. of Pediat.*, 1908, p. 721.)—**B. F. Royer**.—This paper, which contains a good clinical and patho-

logical account of the disease, is illustrated by temperature charts and interesting photographs of the skin lesions, and characteristic attitudes of the patients.

J. D. ROLLESTON.

Diabetes in infants and young children (*'Arch. of Pediat.,'* 1908, p. 655).—H. B. Wilcox thinks it probable that diabetes in the young frequently escapes detection. Whereas out of 2240 cases collected by Pavy, Prout and Meyer, only 11, or less than $\frac{1}{2}$ per cent., occurred in children, Reden and Saundby found 394 cases, or 13 per cent., in children under fifteen years. Direct or neurotic inheritance, trauma and acute infectious diseases have been regarded as important causes of diabetes in childhood. Wilcox thinks that the abuse of all kinds of sugar, common among children, is also of ætiological significance. There are no symptoms peculiar to juvenile diabetes. In most cases increased thirst is the first sign. The course of the disease is much shorter than in adults. The younger the child the shorter the duration. There is often a period during which there is a suspension of all active symptoms. The pathology is unsettled. The findings in children are the same as in adults. Treatment is unsatisfactory, and little help can be gained from drugs.

J. D. ROLLESTON.

Serum treatment of cerebro-spinal meningitis (*'Arch. of Pediat.,'* 1908, p. 747).—S. Flexner and J. Jobling have analysed 393 cases in America and Great Britain treated with Flexner's serum; 295 recovered, 98 died—a mortality of 25 per cent. The mortality among first to third day cases was 16.5 per cent., among fourth to seventh day cases 23.8 per cent., and among later cases 35 per cent.; 25 to 30 per cent. of the cases terminated by crisis. The duration of the active symptoms after injection of the serum was about eleven days. Very soon after injection the diplococci tended to diminish in number, to become wholly intra-cellular, and to lose their staining power and viability in cultures. The meningeal exudate rapidly lost its turbidity; coincidentally there was a rapid return of the leucocytes to normal in the circulating blood. In unfavourable cases the diplococci increased, the spinal exudate became more turbid, and leucocytosis rose. Relapses, which are not frequent under serum treatment, were accompanied by increased spinal and systemic leucocytosis and reappearance or increase of diplococci. The complications in serum-treated cases were few; the only persistent defect was deafness.

J. D. ROLLESTON.

Serum treatment of cerebro-spinal meningitis (*'Arch. of Pediat.,'* 1908, p. 754).—F. S. Churchill, from personal observations of eleven cases of meningitis, nine of which were due to meningococci, confirms the beneficial effects of Flexner's serum. Injection was rapidly followed by general improvement, by diminished leucocytosis, and a fall in the temperature. Subsequent lumbar punctures showed a clear fluid and a diminishing number of cells and organisms.

J. D. ROLLESTON.

Microsphyria in infantile myxædema (*'La Clin. Infant.,'* December 15, 1908, No. 24, p. 741).—G. Variot showed this case at the Soc. Méd. des Hôpit. (*'Bull.,'* December 4, 1908). The boy had been under observation for a year, since he was eight years old. His radial pulse was almost imperceptible and he had a tendency to cold extremities; the skin was rough on the anterior surface of the legs, on the buttocks and top of thighs, like a slight ichthyosis pilaris. He was pale, with a puffy face. As he was generally

somewhat swollen and of small intellectual development, he was regarded as a *microsphymic*. But on closer examination he was found to be very short for his age. Radioscopy showed marked delayed ossification in the phalanges and metacarpus, which corresponded to that of a normal infant of eighteen months, and is characteristic of infantile myxœdema. The diagnosis of microsphyminia was then abandoned, and the action of thyroid medication confirmed this. Another myxœdematous child, aged 8 years, was also shown, with a very small pulse, which improved with thyroid treatment. His weight was that of a normal child of six years, and his height that of a child of four. Intellectual capacity was feeble and the face puffy, but there was no ichthyosis. The degree of development of his epiphyses corresponded to that of an infant of fifteen months. Dr. Variot alluded to the paper on microsphyminia by Richet and Saint-Giron, who noted that in the symptomatology of this disease ichthyosis was much less frequent than mental debility (*Rev. de Méd.*, November 10, 1908, p. 999). He asked whether there was a direct relationship between myxœdema and microsphyminia, and whether the arterial spasm was not dependent on the cerebral disorders, which were constant in infantile myxœdema. These authors had, however, reported an autopsy on the case of a Mongolian idiot in which microsphyminia co-existed with deficiency of the thyroid gland. It was possible that besides this first variety of microsphyminia of thyroid origin, other varieties existed in which syphilis, by its influence on the nervous centres, causes a disturbance in the function of the vaso-motors and an angiospasm, more or less permanent. The above-mentioned observers showed that microsphyminia was found in various forms of idiocy, and it was impossible to attribute to the myxœdema all those cerebral disturbances which seemed to occupy the first place in microsphyminia; on the other hand, the relationship of the cerebral functions with the vaso-motor system is well known to physiologists.

VINCENT DICKINSON.

Unusual cause of retention of urine in a child: oxaluria due to eating sorrel (*La Clin. Infant.*, December 1, 1908, No. 23, p. 710).—**G. Carrière** brought this case before the Soc. de Pédiât. The girl, aged 6 years, was brought for difficulty of micturition; 250 c.c. were passed with difficulty after twenty-eight minutes, and 150 c.c. were drawn off immediately after by catheter, showing that the bladder emptied itself incompletely. Local signs were absent; there was no disease of the nervous system. The acidity of the urine in terms of HCl. was 4 gr. .55—about four times the normal—and was due to oxaluria. The child had eaten a large quantity of uncooked sorrel.

VINCENT DICKINSON.

The relationship of ichthyosis with thyroid insufficiency (*La Clin. Infant.*, December 1, 1908, No. 23, p. 724).—**M. Vincent**, continuing his researches on the disorders produced by lesions of the thyroid body, communicated to the Soc. des Hôpit. two cases of ichthyosis, which tended to show that this cutaneous affection had some connection with thyroid abnormalities, either hereditary or acquired. One of these cases, particularly interesting, was that of a young adult in whom, at the age of 19 years, suddenly and simultaneously supervened a marked enlargement of the thyroid and an ichthyosis extending to all four limbs and trunk, but sparing the face, genital organs and articular folds. Both patients had, in addition to their keratoderma, a soft, painless thyroid enlargement. Without rejecting the idea of simple coincidence, it was impossible not to be struck by the sudden

and simultaneous thyroid and cutaneous lesions. One patient had also intellectual feebleness and stigmata of degeneration, which, according to Dubreuilh, is not unusual in ichthyosis, and can be explained by the thyroid lesion. It cannot be denied that thyroid lesions exercise a dystrophic influence on the integuments, especially in the infant (myxœdema), and even in the adult, for scleroderma may follow a thyroid atrophy consecutive on rheumatism. Congenital syphilis may also produce similar lesions of the skin through the intermediary of atrophy of certain glands, among which the thyroid holds an important place. On the other hand, acrocyanosis with coldness of the extremities, so frequent among young adults from the country, seems to have some connection with thyroid insufficiency, since it can be cured by thyroid administration. It is more than probable that certain morbid associations of widely different appearance, such as ichthyosis, with imbecility, scleroderma or myxœdema, and also with microsphygmia, cyanosis of the extremities and feeble intellect (syndrome of Variot) have a common pathology, namely, an insufficiency of the thyroid gland, either congenital or acquired.

VINCENT DICKINSON.

Ballooning of the perinæum in young infants (*'La Clin. Infant.'*, November 15, 1908, No. 22, p. 685).—**Barbillon** describes this condition as a distension of the perinæum, frequently met with in young infants the subjects of congenital or acquired debility and due to a defect of the pelvic floor, the muscular tissue of which has become impaired. Normally the perino-anal region of young infants is hidden by the approximation of the buttocks, but the wasting of these parts and the thighs, accompanied by a tympanitic state of the abdomen, produces a projection of the perinæum, which is, moreover, resonant on percussion, whereas in healthy infants it is dull. It is a phenomenon of local myopragia, part of a condition of general amyosthenia, which itself is indicative of the feebleness which characterises all the tissues of the organism. It is a symptom in addition to other symptoms of debility which are observed in these little patients, either from premature birth or from long-continued disorders of nutrition. This symptom is the more marked in proportion to the organic deterioration of the child, and tends to disappear *pari passu* with restoration of strength and plumpness.

VINCENT DICKINSON.

An unusual case of infantile paralysis (*'Journ. de Med. de Bordeaux,'* September, 1908).—**Carles** and **Desqueyroux** report the case of a boy, aged $7\frac{1}{2}$ years, in whom after five days' fever generalised paralysis was found affecting all the limbs, the head, neck, and trunk; there was also retention of urine. This lasted three months, and meanwhile atrophy appeared in the muscles of the thenar and hypothenar eminences and in the interossei, producing a claw-hand. The muscles of the left side of the abdominal wall wasted, and when the child cried or exerted itself projected into a well-marked prominence. The muscles of respiration were unaffected, and there was no loss of intelligence. A marked dorso-lumbar scoliosis with the convexity to the left developed due to the weakness of the muscles of the spinal column. The paralysis of the legs was almost complete. The case is unusual in its long initial fever, the extent and duration of the paralysis, with the affection of the spinal and abdominal muscles and the urinary trouble. A symmetrical Aran-Duchenne paralysis of the hands is also unusual. All the affected muscles showed the usual reaction of degeneration.

J. PORTER PARKINSON.

Idiocy and mental deficiencies in early childhood (*The Post-Graduate, February, 1909*).—**Sheffield**.—Idiocy is either congenital, due to ante-natal disease, or arrest of development of the foetal nerve system, or due to traumatism, or to disease or defective development in early childhood. It is very important to get a family history, dipsomania, syphilis, domestic troubles or severe disease in the mother during pregnancy being specially suggestive. A history of infantile convulsions suggests some pathological alteration of the central nervous system which may predispose to mental impairment. The shape of head may be hydrocephalic or microcephalic, and devoid of posterior projection, with prematurely ossified fontanelles, eyes small, ears projecting. In the syphilitic the head is irregularly bossed and traversed by blue prominent veins. Nose small and saddle-shaped; lips thick and with rhagades. The Mongol has a small rounded cranium, flat at the back, face sunken, nose small and broad, cheek-bones prominent and tongue protruding. The skull of the cretin is largish, sparsely covered with thin lustreless hair, set on a short thick neck. Face weak and senile, eyelids and lips thick, tongue heavy and often protruding. The teeth of the majority of idiotic children are irregular, the lips often malformed, the palate high, narrow, and often cleft. Ears may be asymmetrical. Most idiots are undersized, with deformities of the thorax and spine, large abdomen, small pelvis and herniæ. The genitalia are often undeveloped and malformed. The hydrocephale has often spastic paraplegia with athetosis and contractures of the arm muscles. The syphilitic may be helpless owing to deformities of the extremities and joint disease. The Mongol walks late and has weak joints. The paralytic idiot has a paralytic gait. In infantilism a radiogram shows backward development of the centres of ossification of the carpal and metacarpal bones. Idiots often show stigmata of degeneration, asymmetry, malformation, superabundance or deficiency of fingers or toes, club-foot, congenital cataract or other eye lesions, etc. Defective hearing is uncommon, but taste and smell may be defective, and a voracious appetite is frequent. Sensation to touch, pain, heat and cold is defective. The power of attention is either poorly developed or completely absent.

J. PORTER PARKINSON.

Infantile disseminated sclerosis (*L'Echo Med., January, 1909*).—**Garhlinger** records the case of a boy, aged 6 years, who for a fortnight had suffered from weakness and tumbling of the lower extremities. His family and personal history were good. The first symptom was enuresis at night on January 30. A fortnight later the legs were noticed to be easily tired and the gait peculiar, speech was altered, and the movements of the hands unsteady. On February 18 he was brought to the hospital. The face was expressionless, slight paresis of the external rectus of the left eye causing convergent strabismus. No nystagmus or fundal changes. The lower part of the face was weak on the right side. The tongue deviated to the left and showed coarse involuntary movements. There was intention tremor of the arms, especially of the left. The trunk and head oscillated on sitting up. The lower limbs showed intention tremor. The child could only walk when supported, the limbs were abducted, the knees raised too high, and the foot put down suddenly. There was no obvious muscular atrophy. Speech was slow, monotonous and explosive. The tendon reflexes were exaggerated, Babinski's reflex is indefinite. The mind is well developed. There was no trouble of sensation, general or special. The sphincters were normal. No headache. Cerebro-spinal fluid normal. Ophthalmo-tuberculin reaction

present. The lungs were normal, but some enlargement of the tracheo-bronchial glands was present. Later on slight vertical nystagmus appeared. The author discusses the diagnosis from hysteria, chorea, Little's disease and cerebral tumour. Classical authors consider disseminated sclerosis a disease of adults only, but Charcot described a case at the age of fourteen and Sachs one at twelve years. Oppenheim considers that the disease when it appears in the adult has begun in infancy by difficulty of speech, syncope, troubles of sight, etc., and Fürstner is of the same opinion. The author details and discusses eighty-six cases brought forward by other authors, in most of which, however, the diagnosis was doubtful, and he considers that the existence of disseminated sclerosis as a disease of early childhood is doubtful.

J. PORTER PARKINSON.

Large amyloid liver in a boy, aged 9 years (*Glasgow Med. Journ.*, August, 1908).—**Edward Wright**.—Patient had caries of the spine and phthisis pulmonalis. The liver was greatly enlarged, extending down to the pubes, filling the right iliac fossa, and passing across to the left side to about a line with the left nipple. The margins in front and at the left side were very distinctly felt on palpation, and the notch passed upwards just below the umbilicus. It measured nine inches from above downwards and fourteen inches from side to side. The kidneys were enlarged, the left being quite palpable and tender on pressure. There was a slight amount of albumin in the urine. He had one attack of diarrhoea while under observation, and used to suffer from periodic attacks of epistaxis.

JAMES E. H. SAWYER (Birmingham).

Pathology.

The pathology of scarlatinal adenitis (*Allgemeine Wiener medicin. Zeitung*, October 6 and 13, 1908).—**Blacher**, from a complete bacteriological and histological study of six cases of fulminating scarlatina, concludes that there is very seldom streptococci to be found in the blood; that the glands are affected by streptococci on the third day and that there is together with a coagulation necrosis an ulcerative necrotic process. The coagulation necrosis is due to the presence of streptococci, whilst the ulcerative process, which is the dominant feature in the pathology of scarlatina, is not affected by the streptococci.

M. D. EDER.

Leucocytosis in diphtheria (*Univ. of Pennsylvania Med. Bull.*, 1908, p. 222).—**H. T. Karsner** examined the blood in thirteen cases, and found that a varying degree of leucocytosis occurs in diphtheria except in very toxic or mild cases, in which it is occasionally absent. The administration of antitoxin was not found to affect the leucocytosis in any respect.

J. D. ROLLESTON.

Examinations of the pepsin secretion in normal and sick nurslings (*Berl. Klin.*, March, 1908, No. 2).—**Rosentern's** recent investigations on the gastric secretion in infancy were carried out according to the method of Jacobi, which depends upon the fact that an emulsion of ricin and hydrochloric acid is made clear by the addition of pepsin. As a test meal tea sweetened with saccharin was used in preference to milk. The author summarises his results thus: The pepsin secretion of healthy arti-

ficially fed infants increases with age up to three months, when it reaches a point at which it remains constant. Breast-fed infants secrete less pepsin than artificially fed babies at a corresponding age. The quantity of pepsin secreted by the stomach does not vary according to the state of nutrition, but is more or less constant for the age of the infant. Thus older children, who are under weight, secrete pepsin in correspondence with their age and not with their weight. Acute or chronic digestive disturbances do not diminish the quantity of pepsin, but when food decomposes in the stomach the quantity of pepsin is less than normal. In infantile atrophy (the stage of decomposition in Finkelstein's classification of alimentary intoxication) there is thus marked diminution in the quantity of pepsin secreted. The author does not believe that the diminution of ferment in the stomachs of infants leads to definite symptoms or plays an aetiological rôle in the digestion of infants.

T. R. WHIPHAM.

Adrenalin glycosuria as a means of investigating the hepatic functions (*'La Pédiatrie,'* December, 1908, p. 884).—V. Brun injected 1 c.c. of Parke Davis's solution, and found that glycosuria occurred not only in individuals in whom the hepatic function was certainly at fault, as could be proved by alimentary levulosuria, but also in healthy individuals in whom the reaction with levulose did not give a positive result, however small. When the reaction is positive it presents various oscillations which are not constant and is not in direct relation with alimentary levulosuria, which hitherto has represented the most delicate method of investigating the hepatic functions; it is often wanting when this latter is positive and *vice-versâ*. The quantity of sugar in the urine in the human subject in positive cases is so very small as to be of hardly any practical value. The positive reaction of sugar in the urine of adrenalised individuals, besides being extremely slight, is often found in individuals whose liver is certainly sound and functionally perfect, and in these cases is the expression of some modification of vital activity dependent on modification of vascular tone rather than indicative of any pathological condition. For these reasons the author considers that this method cannot with advantage be substituted for those hitherto in use, such as alimentary levulosuria, which is very much more delicate.

VINCENT DICKINSON.

Therapeutics.

The prophylactic use of diphtheria antitoxin (*'Canadian Pract. and Rev.,'* November, 1908, p. 683).—W. Goldie writes from his experience at the Hospital for Sick Children, Toronto. Prior to the prophylactic use of antitoxin thirty-two to forty-eight cases of clinical diphtheria used to occur each year in hospital among a yearly population of 780. The prophylactic administration of 500 units every three weeks, which was soon changed to 1000 units every three weeks, was followed by a fall to seven or eight cases yearly. The interval between the injections was finally reduced to two weeks, and the number of cases within the last four years has fallen to nineteen. Five of these were cases of bacteriological diphtheria arising in measles with laryngeal symptoms. In the remaining twelve the serum had either been withheld or the interval between the injections had been too long. In only two out of 4084 children injected did any alarming symptoms follow injection; both recovered. The percentage of diphtheria cases among the hospital staff who never received prophylactic injections has remained the same.

J. D. ROLLESTON.

Opium in the therapeutics of infancy (*L'Echo Med. du Nord*, December, 1908).—**Deléarde** states that it is the custom to employ very small doses of the drug to infants. The first to break with the old traditions is Borde, of Bordeaux, who has shown the tolerance of infants to opium, especially in acute gastro-enteritis of infectious origin. He finds the urine increases and the number of stools diminish, without causing any symptoms of retention of toxic material. The abdominal tympanitis lessens. It should be noted that Pal showed that morphia did not paralyse the intestine, but regulated its contractions. Vomiting is also stopped. The morphia is given in the form of the syrup of morphia (of the French Pharmacopœia) and is made up to 100 c.c. in different strengths for different ages. For example, at the age of one month 2–3 grm. of the syrup, 3 months 5 grm., 6 months 9 grm., 1 year 13 grm., 18 months 16 grm., 2 years 18 grm. Of this solution a dessert-spoonful is given every hour, day and night, till the child falls asleep. On awakening the treatment may be continued. The child becomes much better after twenty-four hours, the temperature has fallen, and the diarrhœa and vomiting, if not ceased, have much improved. During this time milk is stopped, and decoction of cereals given instead. By this method the infant of 3 months is given 4 centigramme of extract of opium. Deléarde employs the following modification of this method: he gives every three hours a mixture of paregoric elixir of opium with gum acacia and orange flower water, the elixir being given in the doses of 5 grm. per year of age. For example, to an infant of 3 months 1.25 grm., and double that quantity to an infant of 6 months, and so on. This elixir in 10 grm. contains 5 centigrammes of opium extract. He considers the advantage of the opium treatment is the more rapid return to ordinary alimentation. The contraindications for opium are—pulmonary affections, great wasting, and chronic enteritis. Sometimes he adds lime-water to the medicine, and occasionally lactic acid. Opium is also of great value in the spasm accompanying laryngeal affections in the infant, and also in whooping-cough, when it lessens much the violence of the cough and the accidents resulting from this.

J. PORTER PARKINSON.

Otology, Laryngology, and Rhinology.

On the anatomical varieties and their bearing on the treatment of pathological conditions of the palatine tonsils (*Lancet*, February 13, 1909).—**Seccombe Hett** has an article with the above title. His conclusions are based upon the examination of 100 different species of mammalian pharynges and of 1000 pathological tonsils in living human subjects. He classifies tonsils as (1) imbedded; (2) projecting; (3) flat; (4) hanging; (5) tonsils with preponderance of anterior, middle or posterior masses, or of a combination of these; and (6) tonsils with marked lingual prolongation. He points out that sepsis and not size is the criterion for the necessity for surgical interference. As regards operation, he considers that enucleation is undoubtedly the ideal method, especially with the imbedded tonsils of young children. When it is not done, he advises the employment of the vulsellum in conjunction with the guillotine. The paper should be read in full.

MACLEOD YEARSLEY.

Spasm of the isthmus faucium in children (*La Pediatria*, February, 1907).—**Antonio Jovane**.—Three cases of dysphagia in children only in respect of solids are described. All three children were deficient in

intellect. One case is worth reporting fully: a boy, aged $1\frac{1}{2}$ years; parents blood-relations; one brother with the same difficulty in swallowing, breast-fed. Solid food first returned at one year old, when mother noted he began to keep it a long time in his mouth, to chew it, and then spit it out. If compelled to swallow it, choking and eventually vomiting ensued. Fluids were easily swallowed. The child was well nourished but rachitic, his palate was hyperæsthetic, and he was an imbecile. The dysphagia disappeared gradually at the age of three.

MACLEOD YEARSLEY.

Ear complications of scarlet fever and diphtheria (*'Practitioner,'* January, 1909).—**Macleod Yearsley** discusses the ear complications in the two diseases exhaustively. In diphtheria he considers (1) diphtheritic inflammations of the meatus, (2) of the Eustachian tube and middle ear, (3) acute purulent and non-purulent inflammations of the middle ear without the formation of membranes, and (4) internal ear affections. The conditions met with in scarlet fever he considers as due to (1) the toxins of the disease, (2) extension from the throat, or (3) the general weakness due to the fever. Treatment is discussed exhaustively, and he quotes the work at the Monsall Fever Hospital as showing that 84·5 per cent. of the cases of otitis were curable by intra-tympanic methods, and that of those that needed operation the radical method gave the best results. He concludes with some remarks on the relation of scarlet fever and diphtheria to deaf-mutism.

MACLEOD YEARSLEY.

Phlebitis without thrombosis as a cause of obliteration of the sinus in children (*'Zeitschr. f. Ohrenheilk.,'* LII, p. 111).—**Kramm**.—A number of cases of obliteration of the sigmoid sinus have been described (references are given), so that it is not very rare for an inflamed sinus which has not received operative treatment to lead to obliteration of the sigmoid. Hitherto it has been held that this must always be caused by previous thrombosis. In some cases, however, inflammatory thrombosis cannot be brought forward as the cause of obliteration. Kramm gives details of two cases in which it was possible to observe the manner of healing of an inflamed sinus in the natural way, viz. by compression and phlebitis by an extra-dural abscess with resulting agglutination of the vessel walls. Both Kramm's cases were children (aged 6 and $5\frac{1}{2}$ years respectively), in whom the sigmoid groove is considerably flatter than in adults. He asks: Does the simple, i. e. non-thrombotic, sinus obstruction occur fairly frequently in childhood? and says the answer must be determined in the future.

MACLEOD YEARSLEY.

Arterial hæmorrhage from the auditory meatus in a child, after a brief attack of otitis media acuta following tonsillitis with tonsillar abscess; ligation of the common carotid; uneventful recovery (*'Arch. of Otol.,'* XXXVII, p. 547).—**Spalding** records this rare case. A boy, aged 5 years, had tonsillitis, rapidly followed by right tonsillar abscess, three weeks before coming to hospital. Acute otitis set in on the same side. After one day's pain the membrane perforated, giving exit to a large amount of steadily flowing serous discharge, without blood, which continued for four days before the child was admitted. On the seventeenth day sharp arterial hæmorrhage occurred without warning. The meatus was plugged, with the result that blood flowed from the nose and mouth and much ran into the stomach, bleeding ceasing only when the child fainted

from loss of blood. Fresh hæmorrhages occurred on three successive days. On the fourth day the patient was admitted to hospital. Further plugging with adrenalin and hypodermic injection of calcium chloride was tried, but a fresh and abundant hæmorrhage occurred next morning, the patient being comatose from loss of blood; temperature 102° F., pulse 170, respirations slow and hardly perceptible. The common carotid was tied, the mastoid opened and carefully cleansed of pus and *débris*. Immediate improvement followed, the pupils, which had been before unequal (right pin-head, left widely dilated), returning to equal size. Recovery was uneventful and rapid. The rarity of these cases is such that this is only the twenty-second on record. Spalding refers to Spencer's paper ('*Med.-Chir. Trans.*,' vol. LXXIV, p. 373), in which it is noted that in six cases of this class (acute otitis media in children), two died in which ligation was not performed, and four recovered when the common carotid was tied. The youngest child was three years old, the oldest eleven. The time between the onset of the otitis and the hæmorrhage varied from ten days to two months.

MACLEOD YEARSLEY.

Bacterial suspensions in the treatment of aural suppuration ('*Arch. of Otol.*,' xxxvii, p. 564).—**Ray Connor** gives details of eleven cases of aural suppuration, varying in age from four days to six years, treated by vaccines of the organisms found by cultures from the discharge. The organisms found and the corresponding vaccines used were: Pure streptococcus 1, streptococcus and *Staphylococcus aureus* 2, streptococcus, *Staphylococcus aureus* and *albus* 1, *Staphylococcus aureus* 1, *Staphylococcus albus* 1, Friedlander's pneumo-bacillus 1, pneumococcus and diphtheria bacillus 1, pyocyanus 1, *B. coli communis* 1, and one of the proteus group 1. In no case was there ever any trouble at the site of inoculation, nor were the general symptoms ever alarming. Connor's conclusions are: (1) The method is not available for routine or general use in chronic aural suppuration. (2) Those cases in which free drainage has been established by operation are most likely to be benefited. (3) Benefit may be obtained in some intractable cases which resist all other methods of treatment. (4) Secondary operations may sometimes be avoided.

MACLEOD YEARSLEY.

Non-suppurative involvement of the labyrinth in the course of mumps ('*Journ. of the Amer. Med. Assoc.*,' December 5, 1908).—**G. W. Boot** reports two cases of this serious (but, luckily, uncommon) complication of mumps, one in a man, aged 21 years, one in a girl, aged 12 years. The latter suffered from left tinnitus and deafness on the first day of her attack. She was examined two months later and both tympanic membranes were normal and she was totally deaf in the left ear for any part of the scale. Subsequent to the onset of the parotitis she was confined to bed for two weeks with severe dizziness and vomiting. On recovery there was no noticeable disturbance of equilibrium. The author analyses, in an excellent table, 51 cases, being the 2 reported with 49 from the literature. The average age of the 22 males and 22 females was eighteen years, and the relative ages, given in decades, were as follows: 1 to 10, 1 male, 5 females; 11 to 20, 11 males, 9 females; 21 to 30, 4 males, 7 females; 31 to 40, 3 males, 4 females; 41 to 50, 1 male, 0 females. The analysis shows that there are three distinct types of the complication: that in which the cochlea is chiefly involved, that in which the semi-circular canals are most affected, and that in which the

whole labyrinth suffers. Boot considers the condition to be due to an acute infection by a non-pyogenic micro-organism (probably that described by Bein, Michaelis, and Busquet) reaching the labyrinth by the blood. Prognosis is bad. The best results in treatment have been those from pilocarpin and iodide of potassium. [The serious nature of this complication is one that should be recognised by all practitioners, as the only chance of saving the hearing lies in *immediate* treatment.—M. Y.] The time of onset in the 51 cases varied from four days *before* the parotid swelling to fifteen days after.

MACLEOD YEARSLEY.

Local anæsthesia in adenoid operations ('*Wien. med. Wochens.*,' October 10, 1908).—Hutter describes an elaborate method for anæsthetising the pharyngeal tonsil. It consists in painting the growth with a 10 to 20 per cent. solution of cocaine, passed through one nostril, left *in situ* for a few minutes and the process repeated on the other side. A straight needle, attached to a hypodermic syringe, is then passed *viâ* the nares into the adenoid growth and a warm 5 per cent. solution of β -eucaine, with 0.8 per cent. of sodium chloride, with five drops of adrenalin, injected. The adenoids are then removed. [Considering that gas or ethyl chloride, *properly administered*, give such excellent results, it is difficult to see what advantage can be gained by the local method of anæsthesia here described. The chief necessity for an anæsthetic in adenoid operations is the discomfort and fright caused by the introduction of instruments into the post-nasal space rather than any actual pain. Hutter's method is not likely to find much favour in England.—M. Y.]

MACLEOD YEARSLEY.

Deaf-mutism from inherited syphilis ('*Bull. et Mém. de la Soc. Française d'Oto-Rhino-Laryngol.*,' 1908).—Castex gives his latest research into the causes of deaf-mutism. Out of 719 children, he found only 18 cases in which syphilis could be the cause (2.50 per cent.).

MACLEOD YEARSLEY.

Surgery.

Fracture of the skull with rupture of the meninges; trepanning; cure ('*La Med. de los Niños*,' November, 1908).—Battestini reports the case of a gipsy child, aged 10 years, who was taken into hospital for fracture of the left parietal bone; the meningeal tear was one centimetre long, exposing the fissure of Rolando. There was paralysis of the right leg and thigh, dilatation of the pupil and aphasia. The injury had been inflicted by a stone thrown at the child. After injection of normal saline solution operation was carried out and a blood-clot removed. On the twenty-sixth day the child was quite recovered; there was neither paralysis nor aphasia, the wound had almost healed up, and the child at the insistence of the family left the hospital.

M. D. EDER.

When should treatment of scoliosis begin? ('*Prag. med. Wochens.*,' December 10, 1908).—Eckstein states that medical inspection of the schools in German Bohemia has shown the existence of 600 children—324 boys and 276 girls—between the ages of 6-14, suffering from spinal deformity. About 95 per cent. of these cripples belong to the poorest section of the community. Rickets is the great cause of scoliosis and is also the form in which prognosis is worse as regards complete recovery.

The author has never seen a case of self-cure, although it is often said the child will grow out of it; there is also no physiological scoliosis. The common form of scoliosis commences about the seventh year and gets worse progressively till the tenth year. It should be diagnosed early and thorough treatment carried out as early as possible; with proper orthopædic treatment excellent results can always be obtained. The surgeons must get into touch with the teachers, that proper attitudes may be adopted during lessons and all suspected cases notified early.

M. D. EDER.

Foreign body in a bronchus (*South African Med. Record*, December, 1908).—**Moffat** records two cases of this accident, one of which occurred in a boy, aged 7 years. Eight days before being seen for dyspnoea and cough he had caught a pistol cartridge in his mouth and it disappeared. He could walk with comfort, but turned blue occasionally after coughing. There was deficient entry of air into the right chest below the fourth rib in front, but no dulness or bronchial breathing. In the third and fourth right spaces was a loud rhonchus. With X rays a foreign body was seen to the right of the spine. Next day there was dulness and absent breath-sounds below the fourth rib in front and the sixth behind. Pulse and temperature were normal, and respirations 20 a minute. A low tracheotomy was done and a nasal polypus forceps gripped the foreign body, which was easily removed. He made a good recovery.

J. PORTER PARKINSON.

Sarcoma of kidney (*Arch. of Pediat.*, 1908, p. 857).—**C. C. Rush** records a case in a child, aged 9 months. The urine contained albumin with hyalin, granular, and blood-casts. The tumour, which involved the right kidney, was removed by an extra-peritoneal incision, and proved to be a round-celled sarcoma. The child died two hours after the operation.

J. D. ROLLESTON.

Diphtheria following tonsillectomy and adenectomy (*Arch. of Pediat.*, 1908, p. 853).—**J. S. Wile** records a case in a girl, aged 17 years. The condition was at first regarded as a post-tonsillectomy exudate, and then as a secondary streptococcal infection. A culture was not taken and anti-toxin was not injected till she had been ill several days. Death took place from toxæmia eight days after the operation.

J. D. ROLLESTON.

Congenital hypertrophic stenosis of the pylorus successfully treated by gastro-jejunostomy (*Arch. of Pediat.*, 1908, p. 806).—**A. W. Mitchell** and **J. C. Oliver** record two cases. (1) A girl whose mother and grandparents had suffered from gastric trouble and whose mother was tuberculous started vomiting when four weeks old, and two weeks later showed well-marked signs of hypertrophic pyloric stenosis. Treatment during the fifth and sixth weeks, consisting of frequent very brief nursings, lavage of the stomach, rectal feeds and inunction of lard proved unavailing. In the seventh week posterior gastro-jejunostomy was performed. Some enlarged mesenteric glands, probably tuberculous, were found during the operation. Ten months later the child was in good health. (2) A boy, healthy at birth, began vomiting when three weeks old. After three weeks' medical treatment posterior gastro-jejunostomy was performed. On the eleventh day after the operation the stitches were found to have given way, and a considerable part of the small intestine was found in the dressings.

Secondary suture of the abdominal wall was made. For three weeks after the operation the child had a wet nurse, and then was fed on modified cow's milk. Six months later he was reported to be in good health. The absence of bile in the vomit is regarded by the writers as a valuable differential point in favour of pyloric obstruction as against intestinal obstruction.

J. D. ROLLESTON.

Misplacement of the kidneys with malformation of one of them (*Interstate Med. Journ.*, January, 1909).—**Tuholske** and **Robertson** report an unusual case of congenital misplacement of the kidneys, one of which was likewise malformed. The condition was found at operation in a woman, aged 20 years. The right kidney lay upon the right side of the lumbar vertebrae, partly upon the bodies and partly upon the transverse processes, and was normal in size. The left was situated between the layers of the root of the mesentery over the third and fourth lumbar vertebrae just to the left of the median line; it was an empty, misshapen sac about three inches in length, communicating with which were two tubular prolongations on the upper side. To the naked eye no renal tissue could be seen, but microscopically the tubular prolongations and the sac were found to contain kidney tissue. The ureter was small, and the renal artery proved to be a branch of the common iliac. Exploratory laparotomy was undertaken for recurrent attacks of severe pain just to the left of the umbilicus. The left kidney and the appendix, which was found to be diseased, were removed. The urine had a specific gravity of about 1020 and contained albumin, the left kidney secreting the larger amount. Microscopically pus and swarms of bacteria were found in the urine from the left kidney, and red blood-cells in that from the right. The patient eventually made a good recovery.

T. R. WHIPHAM.

School Hygiene.

Report on the examination of the elementary school children in Stuttgart for 1907 (*Med. Corr. Blatt. Württemberg. Aertz. Land.*, October 31, November 7, 14, 1908).—**Gastpar** included in his report all the children in classes 1-6; of 10,000 children in the schools 8037 were examined; many kept away because the teachers in some classes did not insist on the inspection. The children were examined simultaneously in three rooms. In the first room, general condition, skin, teeth, glands and adenoids (by inspection only). In the second room the chest was exposed and the heart and lungs inspected, the abdomen only in those cases where there was any complaint. In the third room the eyes and ears were tested, the latter by whispering at eight metres; here the children were also weighed and measured. In the special room the urine in a few cases was also tested. There was also a dark room for eye and ear examinations in special cases. Each child takes seven minutes for the complete examination. Gastpar classifies the children according to their nutrition into five divisions, and the various diseases—skin, etc.—are again grouped according to these five divisions of nutrition. In nearly every case disease is found to be intimately related to the general condition. For instance, in eye disease it rises at one age-period from 8.2 per cent. in well-fed children to 20.5 per cent. in under-fed children; in another age-period the rise is from 10 to 30 per cent. Ear diseases vary similarly from 4.3 to 6.1 per cent.

M. D. EDER.

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ON CONGENITAL HEART AFFECTIONS, ESPECIALLY IN RELATION TO THE DIAGNOSIS OF THE VARIOUS MALFORMATIONS.

THE WIGHTMAN LECTURE FOR 1909.*

By GEORGE CARPENTER, M.D.,

*Physician at the Queen's Hospital for Children; Membre Correspondant de la
Société de Pédiatrie de Paris; Vice-President Royal Society of Medicine.*

GENTLEMEN,—In acknowledging the honour that you have conferred upon me by inviting me to deliver the Wightman Lecture, I must confess that the acceptance of this distinction proved far easier than the selection of a suitable subject for the occasion.

In choosing congenital heart affections, I have been guided by the fact that these disorders are essentially and peculiarly infantile and childish complaints, and that it affords me an opportunity of passing in review the work done in this direction by the late Society for the Study of Disease in Children, and of its successor the Section for the Study of Disease in Children of the Royal Society of Medicine.

Passing now to the subject of congenital affections of the heart, I will first draw your attention to the known causes which bring about the various departures from the normal, which are classed under the heading "Congenital Heart Affections."

* Delivered at the Section for the Study of Disease in Children of the Royal Society of Medicine, June the 24th, 1909.

The coincidence of congenital malformations of the heart with malformations in other regions of the body is a matter of everyday experience. Heart malformations are not always accompanied by other congenital bodily defects, but they are sometimes found in association with such diverse structural faults as hare-lip, cleft palate, ill-developed teeth, supernumerary auricles, and supernumerary nipples, polydactylism, syndactylism, webbed fingers, steeple-skull, defects in the abdominal wall, herniæ, ill-developed and absent rib cartilages, undescended testis, atresia of the anus and rectum, post-anal dimple, congenital opacity of the cornea, coloboma iris, congenital defects of the orbits, congenital ptosis, not to mention many other congenital irregularities of development which are obvious to the naked eye—cretinism, for instance—which sometimes bear them company.

Of internal mal-developments which are not obvious on inspection there are numerous illustrations, such as unilateral kidney, horse-shoe kidney, double ureters, absent spleen, supernumerary spleens, malpositions of the intestines, atrophic patches in the choroid, transposition of the viscera, four lobes to the lungs, and an accessory bronchus amongst other anomalies.

Deaf-mutism is sometimes an associated condition, and the coincidence of Mongolian imbecility with congenital heart malformations has been illustrated by cases and morbid specimens, which have been shown from time to time at the meetings of the late Society for the Study of Disease in Children, and also at those of its successor, the Section for the Study of Disease in Children of the Royal Society of Medicine. Those adverse influences which lead to the production of congenital defects of the nervous system are also apt to be associated with malformations of the heart, and illustrating this feature I have at the present time under my care a boy of ten years with Friedreich's disease, in whom the two conditions are combined.

That congenital malformations of the heart are sometimes hereditary has been proved by several observers—Ferrannini, De la Camp, Orth, and others—who have recorded examples of this as a family complaint. Among my own series I have illustrations of two cases in the children of one family, and of three cases in the children of the other.* Among the latter, one, an example of steeple skull,

* "Two Sisters showing Malformations of the Skull and other Congenital Abnormalities," 'Reports of the Society for the Study of Disease in Children,' vol. i, pp. 110-118, illustrated. "Case of Acrocephaly with other Congenital Malformations," 'Proc. Roy. Soc. Med.,' Section for the Study of Disease in Children, vol. ii, No. 2, pp. 45-53. Ditto, "Autopsy," vol. ii, No. 7, pp. 199, 200, illustrated. Preparations of the Skull and Brain: Nos. in Catalogue, 360'50, 360'51, 360'52, Royal College of Surgeons Museum, Lincoln's Inn Fields.

came to autopsy, and the heart, like the child, was fantastic, and could not be placed in any usual anatomical grouping. The foramen ovale was widely open and divided into two by a bridge of tissue. Behind this was another hole in the septum, and above this hole the septum was minutely fenestrated. The right auricular appendix was very large and muscular, $1\frac{1}{4}$ in. long by $\frac{3}{4}$ in. broad at its broadest part, and it and its corresponding auricle made an elongated chamber about 2 in. long and a little more than $\frac{3}{4}$ in. broad behind. The tricuspid orifice was small, $\frac{3}{16}$ in. only, with natural though small valves, and passed into the cavity of the right ventricle, which was so small that it would only admit a pea. The pulmonary artery was smaller than the aorta, and was situated directly over the ventricular cavity. The thickness of the ventricular wall was $\frac{3}{16}$ in., and at its upper and outer part was a distinct muscular hump, on which the enlarged auricular appendix rested. The left auricle was more muscular than natural, and the left ventricle was enormously hypertrophied, its walls measuring $\frac{7}{16}$ in. thick, which so encroached on its cavity that its capacity appeared to be even less than that of the right. The mitral orifice, which was larger than the tricuspid, was $\frac{5}{16}$ in. across, and its valves were natural. The aorta, which had a right-angled bend on it like that of a ventilating shaft on a steamer, was thick walled; its valves were normal. The greater part of the heart was made up of the left ventricle and the right auricle and appendix. There was no bruit during life.

Since heart malformations have been shown to be a family complaint in some instances, it must be admitted that inherited as well as acquired defects in the sperm and germ-cells of the parents are of some importance in the production of malformations of the heart, as in other regions, for erratic tendencies to produce deformities when once acquired are handed down from parents to children.

Inquiry has been directed to the state of the mother's health, both bodily and mental, during the pregnancy to serve as an explanation for the production of congenital cardiac defects. Maternal impressions and trivial injuries have been, and are still frequently, advanced to explain away congenital anomalies of the heart and elsewhere, because mothers have been brought up in such beliefs, and readily recall all sorts of strange sights and slight mishaps incident to the pregnancy, if it be the misfortune of the offspring to present any abnormalities of mind or body. When it is realised that the heart is perfectly formed, though in miniature, in seven weeks' time from the date of conception, the various examples of congenital heart disease

that have been recorded by J. Lewis Smith and others, following upon frights and so on during the last two or three months of pregnancy, these psychical disturbances cannot possibly have had any effect upon the foetal heart. Maternal impressions must, I think, be thrown into the waste-heap of other ill-founded superstitions.

But it is otherwise when the bodily health of the mother becomes the subject of scrutiny. In regard to definite illnesses affecting the mother during the pregnancy, it is surprising how few mothers give a history of suffering any illness during that period. In 100 examples of my own of congenital malformation of the heart, in a large number the parents and their families were apparently free from rheumatic taint, as no history of that complaint was admitted. In a few instances the parents had suffered from rheumatic fever, but in no case was there any evidence in this series of maternal rheumatic fever taking place during pregnancy. Therefore the commonest cause for endocarditis in children was conspicuous by its inconspicuousness in my pre-natal cases. But Theodore Fisher* narrates that in a case of foetal endocarditis three months before the birth of the infant the mother suffered from severe pain in the left knee, and for several days she could only get about the house with difficulty. This fact is of importance, because it shows that rheumatic fever in the mother is not essential to the production of foetal endocarditis, and it suggests that those painful bodily ailments in the mother during the carrying, which are grouped under the generic term "rheumatic," may be the cause of foetal endocarditis in the infant.

Endocarditis in the foetus has been attributed to typhoid fever, influenza, pneumonia, and other maternal infections. But these diseases arising during the pregnancy are infrequent in comparison with the number of cases of foetal endocarditis for which a ready explanation is not forthcoming. It would appear that the placenta is able to be penetrated and the foetus infected by micro-organisms and toxins, quite apart from maternal indisposition. Perhaps favouring the toxin origin is the fact that the form of the endocarditis is frequently of the sclerotic or chronic variety. I have found tolerably frequently among my cases a history of miscarriages, premature births, or decease within a short interval of birth. Such misfortunes are generally regarded as strong presumptive evidence of syphilis. I have, however, discovered no reason to ascribe many of these accidents of the pregnancies to syphilis, and it is more than

* "Congenital Aortic Stenosis from a Child, aged 4 months," 'Reports of the Society for the Study of Disease in Children,' vol. ii, p. 16.

likely that they were due to anatomical abnormalities in the fœtus which were incompatible with its life.

Syphilis, of course, is naturally uppermost in the mind as an explanation for congenital affections of the heart, but it does not appear to be a very important factor in the creation of cardiac abnormalities. The number of congenital syphilitics that I have seen with congenital heart malformations has been very few; and the number of my cases of congenital heart disease that could be ascribed to syphilis was trifling—only three. Bearing upon this question, it may be noted that Hochsinger found congenital heart disease only seven times in 500 cases of congenital syphilis. The statement has been made at our various meetings, and has not been warmly controverted, that congenital syphilis is of considerable importance in the production of congenital affections of the heart; but this view does not appear to be warranted by my own clinical experience. There is bacteriological evidence to prove that malformations of the cardiac valves may be associated with spirochaete infection. Landouzy and Laederich* found the mitral and the tricuspid valves puckered and thickened, and partly adherent to the ventricular septum in an obviously syphilitic infant of two and a half months. The right side of the heart was hypertrophied and the aorta small. Spirochaetes were found in the papules of the skin and in the supra-renal glands, but not elsewhere. It would appear likely that the virus of syphilis exerts a two-fold influence, viz. by the action of the poison on the endocardium, with the production of fœtal endocarditis, and by its action as a producer of malformations without endocarditis.

There is strong presumptive evidence that alcohol has a decided influence in the production of deformities, and clinical experiences are borne out by experimental observations on the lower animals. In Hodge's experiments, where alcohol was administered to two parent dogs, of twenty-four puppies born many were deformed or dead. Féré, also, in controlled experiments on chicken's eggs exposed to the vapour of alcohol, found that a number of the chicks were found dead or stillborn, and displayed various deformities.

That immoderate drug-taking may be a cause for congenital abnormalities, I have an example in the person of a lady who was a confirmed morphino-maniac at the conception and during the pregnancy, and with the result that an imbecile child was born to her.

Tuberculosis in the parents has been credited with the production of hypoplasia of the aorta.

* 'La Presse Medicale,' May, 1907, No. 43, p. 337.

Several examples of foetal endocarditis have been shown to the Society for the Study of Disease in Children, or have been spoken of at its meetings. Theodore Fisher's case* of aortic disease occurred in a child, aged 4 months. The flaps of the semi-lunar valves were much thickened and adherent. Some thickening of the flaps of the mitral valve and its chordæ tendineæ was also present. G. W. Nash, of Bedford, at the same meeting, narrated a case of a child who died, aged 6 months, from mitral stenosis. The mitral valve was puckered and diminished. This he attributed to sepsis from defective drainage, as the mother developed pneumonia from that cause after the confinement. In a case reported by the late A. E. Sansom†, in a baby, aged 2 months, there was a ring of granulations of endocarditis, and the mitral valve was thickened. The changes were of the rheumatic character, but the mother, so he stated, had never suffered from rheumatism, and he went on to say that endocarditis in intra-uterine life was so rare that it was desirable that every case should be reported. At a later meeting during the same session, Fisher‡ showed the heart of an infant, aged 4 months, in which the aortic and pulmonary valves displayed large organised vegetations. There was an intra-pericardial septal defect between the pulmonary artery and aorta, which extended downwards into the upper part of the septum ventriculorum. The pulmonary artery had two valves, and the cardiac defects were associated with somatic defects in the shape of a hare-lip and the rectum and vagina sharing a common aperture. Fisher attributed the endocarditis to defective house-drains during the pregnancy. In Ayrolle's case§ there was marked stenosis of the mitral valve, on which appeared numerous endocarditic vegetations. The infant died ten days after its birth. In a case recorded by Cotton,|| granulations were present both on the mitral and on the cusps of the aortic valve.

Planchu and Gardère¶ have recently recorded a case of endocarditis of the pulmonary artery in an infant, aged 6 weeks. The artery was bivalved, the lower surface of the cusps being rugose and showing numerous vegetations and ulcerations. The cardiac septa

* *Loc. cit.*

† "The Pathological Anatomy and the Mode of Development of Mitral Stenosis in Children," *Medical Society's Transactions*, vol. xiii, p. 143.

‡ "A Specimen of Congenital Heart Disease, showing Vegetations on the Pulmonary and Aortic Valves," *Reports of the Society for the Study of Disease in Children*, vol. ii, p. 155.

§ *Rev. Mens. des Mal. de l'Enf.*, 1885.

|| *Trans. American Pediatric Society*, vol. xii, 1900, p. 142.

¶ *Arch. de Med. des Enf.*, tome xii, pp. 201-208, March, 1909.

were so defective that the organ was practically one of two chambers. The great vessels were transposed and the pulmonary artery was very narrow, and would only admit a small sound. There were associated visceral defects. In the heart of an infant, aged 25 days, recently exhibited by André Moussous* the mitral valve showed signs of recent endocarditis. The orifice of the pulmonary artery was obliterated by a membranous arched diaphragm produced by the coalescence of the sigmoid valves. Above the tricuspid in the cavity of the auricle there was a pre-orificial narrowing in the shape of a rigid ring hardly admitting a goose-quill. The foramen ovale valve had a fenestrated appearance.

Fœtal heart murmurs have been recorded by various writers. Tricuspid regurgitation has been detected *in utero* by Peter,† who heard a systolic bruit replacing the first sounds of the heart. The child was stillborn. The tricuspid valve was covered with vegetations and tied down by shortened chordæ tendinæ. Hochsinger‡ quotes two cases, those of Barth and Hennig. In the former the child was also stillborn and there was endocarditis of the tricuspid valve. In Hennig's case a double murmur was due to endocarditis of the aortic valves. In Christopher's case, reported to the American Pediatric Society, the aortic and tricuspid valves showed verrucose thickening, and the pulmonary artery took origin from the aorta. In Wetherill's case§ the murmur persisted after birth and was attributed to stenosis of the pulmonary artery, while in Hall's case|| the bruit disappeared and was ascribed to patent ductus arteriosus, which became obliterated.

In the production therefore of congenital affections of the heart two distinct processes can be seen in action, viz. developmental disturbance and inflammation. Both can operate without the other and both are frequently combined. Those mal-influences, inherited and acquired, which preside over the sperm and germ-cells have been passed in review, as also the causes of fœtal endocarditis. The results of fœtal endocarditis are seen in the shape of sclerotic valves and on these valves it is not uncommon to find recent endocarditic vegetations. It also frequently happens that in association with congenital developmental anomalies the mitral and tricuspid valves

* 'Société de Méd. S. de Chir. de Bordeaux in Gaz. Hebd. des Sc. Médic.,' March the 8th, 1908. 'Archives des Maladies du Cœur,' vol. i, 1908.

† 'Congenital Affections of the Heart,' p. 72, 1894.

‡ 'Die Auscultations des Kindlichen Herzens.'

§ 'Amer. Journ. of Obstetrics,' January, 1904, p. 36.

|| 'Archives of Pediatrics,' 1897, p. 905.

are found to be somewhat thickened and crumpled at the edges though perfectly efficient, suggesting that they have undergone a mild endocarditis during foetal life. It is in stenosis of the pulmonary artery that valvulitis and anomaly are so frequently combined. The points at issue are these: Are the patent septum ventriculorum and the atrophied pulmonary artery the result of increased blood-pressure in the right ventricle and starvation of the artery—that is, purely mechanical, or are the defects in the artery and the septum ventriculorum of developmental origin, and the endocarditis of the pulmonary valve an indication of its increased liability to attack by reason of developmental anomaly?

As Osler has pointed out, it does not seem reasonable to suppose that inflammation could be confined to such tiny structures as the pulmonary valves of a foetus less than two months old. In a small number of cases endocarditis occurs without septal defect, and in these the inflammation must have taken place at a much later date after the completion of the septum. Many developmental cardiac anomalies occur without valvular inflammation similar to the cases in which inflammation sometimes participates. It is obvious, therefore, that inflammation is not necessary. It would seem in some of these cases that endocarditis merely fastens upon a weak spot the weakness inherent to mal-development because it is frequently seen that malformed as well as once diseased valves are prone to attack.

It is only in a very small proportion of the cases of congenital defect that endocarditis, when it is limited to the valves, can be viewed as the cause of the disease, and such arise after the heart has been completed. The bulk of the cases of congenital malformation of the heart appear to be due to developmental errors when seen by the light of modern research on cardiac development.

Morbus Cœruleus.

Morbus cœruleus and congenital malformations of the heart have been looked upon as synonyms, but without reason, for children with severe congenital morbus cordis are frequently not blue, even when excited or crying. Many verified cases of congenital morbus cordis have been recorded where cyanosis was not a symptom during life. On the other hand, chronic lung* disease may be associated with extreme and chronic cyanosis, a characteristic example of which I exhibited to the Society for the Study of Disease in Children in 1906.

* "A Case of Cirrhosis of the Lung and Bronchiectasis," 'Reports of the Society for the Study of Disease in Children,' vol. vi, p. 59.

Some children with congenital morbus cordis are fresh-coloured. Others are strikingly pale. In some the lips are dark crimson, perhaps inclined to blueness rather than redness, or to turn lilac on crying. Or the complexion may be quite good and only the fingers dusky and cold-looking. The majority, however, are cyanosed more or less, and all gradations of cyanosis may be noticed, from that of a dark rubicund face with similar coloured ears and reddened finger- and toe-tips, or a state of rather dusky-blue lips and cheeks and tongue and a similar condition of the extremities, to one where the face is plum-coloured, the conjunctivæ suffused, the buccal mucous membrane and tongue the colour of a slate, and the body generally dusky. In the majority of those who are blue the cyanosis dates from birth, but in others the children show no signs of blueness until after an attack of one of the exanthems, or following bronchitis or bronchopneumonia, with or without whooping-cough.

Increase of cyanosis in those already blue and of paroxysmal onset is sometimes a symptom. In one cyanosed infant of mine, aged 2 months, who developed paroxysmal cyanosis, it was associated with a loud systolic bruit audible all over the front and back of the chest, and most marked at the second *right* cartilage. In another infant, aged 1 month, the only lesion that I could find after death was a patent foramen ovale. During the attacks that I witnessed in these infants the pulse, which was at first rapid, became gradually and quickly slower, and the breathing, which had been accelerated, ceased, and the infant remained for several minutes in a state of complete apnœa, during which time the cyanosis became extreme in the face and lips and tongue, and on the body and limbs. The conjunctivæ were insensitive and the pupils slightly contracted. If left undisturbed after some four or five minutes the infant gasped, the breathing recommenced, the colour returned and the eyes were opened, only to be followed in about half an hour by a recurrence of the same symptoms. Attacks such as these suggest to my mind a central origin, possibly of the medulla, for they bear some resemblance to attacks of unexpected cyanosis and apnœa which sometimes take place during the course of tuberculous meningitis, and with a suddenly fatal result. Such patients can certainly be temporarily revived, and perhaps on several occasions, if their paroxysms of cyanosis are treated by artificial respiration. Morrow* has described recurrent cyanosis associated with very shallow respiration in two infants. One child, at the time of the report, was living and

* "Recurrent Attacks of Cyanosis in Infants," 'Montreal Med. Journ.,' February, 1905.

well. The other, a premature infant, died of asthenia, but there was no post-mortem. Morrow quotes Holt as having described similar symptoms in infants in whom atelectasis was found at autopsy.

Leconte* has reported two examples of paroxysmal cyanosis in children of three and a half and four and a half years old, which appeared for the first time in the first case a month previous and in the second child at two years of age. The attacks were sudden, severe and frequently repeated, and came on without exciting causes. The children became suddenly cyanosed, limp and semi-conscious, respiration was noisy and difficult and the paroxysms lasted two or three minutes. One child had a loud systolic bruit at the second left interspace, and the other transposition of the viscera with a loud systolic murmur at the second right interspace.

Variot, under the term "congenital intermittent cyanosis," has drawn attention to the onset of cyanosis under exciting conditions, energetic movements and forced expiration. In some of these children I have observed attacks of palpitation at the same time. I have seen† cyanosis disappear in an infant of five months and be followed by occasional attacks of cyanosis without any apparent exciting causes. In a boy of four years under my care, whose face and cheeks were like those of a ruddy man of forty, but in whom there was no polycythæmia, though undoubted congenital heart disease, there were frequent paroxysms of cyanosis.

Sudden increase of cyanosis in some of these cyanotic children is very apt to be followed by convulsions. During the attacks the pulse becomes barely perceptible at the wrist, and death is very likely to take place at these occasions.

Cyanosis becomes aggravated when dilatation of the right ventricle takes place, and the veins of the body become overcharged with blood. Microscopical examination of the organs‡ shows extreme capillary dilatation, with thickening and a tendency to fibrillation, as also venous engorgement and thickening in the brain, kidney, liver, heart, and elsewhere. I examined many microscopic sections of the skin of the patient, some twenty years ago, from whom this description of the capillaries is taken, but I found no capillary dila-

* 'La Clin. Infant.,' April, 1907, No. 8, p. 235.

† "A Case of Congenital Morbus Cordis in a Mongol," 'Reports of the Society for the Study of Disease in Children,' vol. viii, p. 278.

‡ "Microscopical Changes in the Organs found in a Case of Cyanosis with Congenital Malformation of the Heart by the Lecturer," 'St. Thomas's Hospital Reports,' vol. xviii; also "Congenital Affections of the Heart," pp. 25, 26, 27.

tations there. Hochsinger* states that the skin capillaries are dilated and tortuous in these cases, especially in the peripheral parts of the body. So wide and so tortuous were the vessels in the case I examined, that while, for instance, in the kidney the afferent arteries of the Malpighian corpuscles admitted but two or three red corpuscles abreast, the enormously dilated afferent veins contained seven or eight or more. Loutaud states that the veins are not only dilated, but have hypertrophied muscular walls. The infrequency of general œdema in congenital cyanosis in children has been ascribed to this hypertrophy. But this absence of œdema occurs in acquired heart disease in children, and is not peculiar to congenital heart disease, and I have also met with several examples of œdema in the last stages of congenital heart disease in spite of these structural alterations in the veins and capillaries.

By far the most common malformations of the heart in association with cyanosis are those cases where the pulmonary artery or the conus are either absent, rudimentary or constricted. Next in frequency in the list of malformations, though only to about one seventh of their number, is transposition of the pulmonary artery and aorta. Apart from these mal-developments, which form the bulk of congenital cardiac anomalies, the malformations which give rise to cyanosis are numerous and various.

Various views have been and are still held as to the causation of cyanosis, the criticism that I have to make about them being that it is sought to explain all cases of cyanosis by one theory, whereas the cause is often complex and differs in different cases.

The oldest theory, that of venous stasis, is that of Morgagni, which has numerous adherents. Another view is that cyanosis is due to the admixture of venous and arterial blood, an explanation which has been supported by Meckel and others. Alexander Morison,† who critically examined some seventy-five cases of congenital heart disease, came to the conclusion that "the main, though not the only factor in the production of cyanosis is the inadequate aid afforded to the circulation by diminished lung functions."

In regard to the second theory, the admixture of venous and arterial bloods, the mingling of these bloods may be most free, and yet no cyanosis be produced. In Breschet's famous case the left arm was supplied by the pulmonary artery, the corresponding subclavian artery arising from it, but the limb was not cyanosed.

* *Loc. cit.*, p. 463.

† 'Cyclopædia of Diseases of Children' (Keating), vol. ii, part ii, p. 762.

Further lung functions may also be considerably encroached upon in a case where the mingling of blood is free to take place and yet no cyanosis appears.* In a child, aged 9 months, under my care, the right and left auricles practically formed one large chamber, and a patent ductus arteriosus in great measure supplied the descending aorta, yet the addition of extensive pneumonic consolidation of the lung was not sufficient to curtail its oxygenating functions, for the infant *was at no time cyanosed*. The parts of the lungs still in action were perfectly healthy.

In another infant of mine, aged 5 months, whose case I have not published before, with transposition of the pulmonary artery and aorta, and a large patent ductus arteriosus, there were the following additional anomalies: A single auricle, with two appendices and a rudimentary membranous septum. There was no trace of a tricuspid valve. The right ventricle was rudimentary, and there was a perforate septum ventriculorum, the size of a crow-quill, leading into it and situated underneath the pulmonary valves. The lungs were quite healthy and pink. The lungs sometimes show an appreciable amount of atelectasis in some infants suffering from congenital malformation of the heart and without the production of cyanosis.

In many cases the explanation is invited, not that the lungs cannot oxygenate properly, but that they are prevented from dealing with a sufficient proportion of the total quantity of venous blood throughout the body by reason of various defects in the pulmonary region, perhaps combined with weakness of the heart muscle.

Cyanosis, therefore, appears to depend in some cases not upon defective aëration from defects in the lungs, but to be due to the conformation of the heart, which by reason of faulty construction and physical weakness is placed at a mechanical disadvantage, and is not adapted to deliver a sufficient quantity of venous blood to the lungs to be aërated.

But this will not explain all cases, for in some the lungs are not healthy and display considerable microscopical alterations. So wide and so tortuous were the thickened lung capillaries in the case of atresia of the pulmonary artery I examined that those in the alveoli admitted six or more red corpuscles abreast. Changes such as these, permeating as they do the whole of the lung structure, are

* "Defective Auricular Septum; Pulmonary Artery larger than Aorta, the Thoracic Aorta being practically a continuation of that Vessel by Ductus Arteriosus; Isthmus Aortæ stenosed," 'Reports of the Society for the Study of Disease in Children,' vol. viii, p. 231.

not conducive to proper aëration. It would appear, then, that diffuse and not localised structural alterations of the lung tissues are favourable to the production of cyanosis. This condition of the lungs alone appears to be sufficient to explain the occurrence of cyanosis in bronchiectasis and chronic emphysema. In the former there is great thickening and dilatation of the alveolar capillaries, and in both diseases there is considerable destruction of them.

Here, then, are two factors in operation; the difficulty of getting the blood to the lungs to be aërated, and the difficulty of aërating the blood when it arrives there should it so happen that the lungs are not in a position to undertake the operation by reason of their structural defects.

Systemic venous congestion complicates matters; it does not produce them, for it is possible to have a considerable amount of cyanosis without venous congestion. When venous congestion takes place additional factors come into play which increase the cyanosis, and these are: (a) the formation of enlarged veins and tortuous capillaries throughout the body, and (b) increased viscosity of the blood leading to further retardation of its flow.

Cyanosis, I take it, is due to deficient oxygenation from whatever cause arising, and not necessarily to impaired lung functions.

The explanation for the tardy onset of cyanosis and its origin in sequence to a diffuse inflammation of the lungs, such as bronchopneumonia may probably be found in some cases in wide-spread alterations in the alveolar capillaries. What is required is that attention shall be paid to the lungs of all children dying from congenital morbus cordis. I have examined them microscopically in a few cases but with negative findings.

In other children perhaps the initial breakdown is in the muscle of the right side of the heart.

Clubbing of the Fingers and Toes and Osteo-arthritis.

Clubbing of the fingers and toes in congenital heart disease, the so-called Hippocratic fingers, depends almost entirely on congestive swelling and thickening of the soft parts of the terminal phalanges. The connective tissue is increased, and the capillaries are enlarged and increased in number.

The finger-tips are broadened and the nails cyanosed, a different appearance to that shown in chronic osteo-arthritis, where the nail is domed like a watch glass, curls over the finger-tip, and bears a striking resemblance to a parrot's beak, and is combined with

osteo-periostitis of the terminal phalanx. The finger looks like a drumstick, and the nail is pink coloured.

There appears to be two varieties of clubbed fingers; in one there is osteo-periostitis of the terminal phalanges, but in the other this has not yet been demonstrated. Whether there are really two varieties of clubbed fingers or whether the conditions are different stages of the same process has not yet been settled.

Sternberg* regards the Hippocratic type of clubbed fingers as the commencement of the process, and this is Walter's† opinion, who thinks the two conditions are closely allied. He also points out that in the majority of cases of osteo-arthropathy defective blood aëration has been a feature of the case.

Bamberger's and Marie's views are that the bone changes are due to the absorption of poisons generated at the seat of the disease, wherever that may be situated, and it has been shown that about one quarter of the cases have arisen from a variety of affections other than those of the lungs. But these views omit to take into consideration the influence of congestion in the production of the enlargement of the soft parts, which certainly is an important cause in congenital heart malformation, and may be contributory in chronic lung disease.

The toxic effects, however, of the cyanosis in congenital heart disease cannot be overlooked, because clubbing is sometimes seen in these cases without much evidence of congestion.

Béclère‡ looks upon clubbing and osteo-arthropathy as due to congestion and toxæmia. Both clubbing and osteo-periostitis may be confined to one limb, and such conditions have been brought about by the pressure of an aortic aneurysm obstructing its circulation. The explanation advanced for the clubbing and osteo-periostitis is that toxic substances generated at the extremity of the affected limb are retained in the tissues by reason of the venous obstruction.

The youngest child among my cases in which clubbing was obvious was aged $2\frac{1}{2}$ years. It was also stated to be present in one aged 7 months, in whom cyanosis was reported to be slight, but the physical signs were in favour of pulmonary stenosis.

* "Vegetationsstörungen und Systemerkrankungen der Knochen," 'H. V. Nothnagel's Spec. Pathol. u. Therapie Wien,' 1903, Bd. vii, Theil ii, p. 72.

† 'St. Thomas's Hospital Reports,' vol. xxiv, p. 1, 1895; *ibid.*, p. 105; 'Brit. Med. Journ.,' 1896, vol. i, p. 329, February the 8th.

‡ 'Semaine Médicale, 1901,' p. 94. 'Bulletins et Memoires de la Société Médicale des Hôpitaux,' 1901, vol. xvii, p. 283. 'Gazette des Hôpitaux,' 1904, p. 754.

Common as is this clubbing of the fingers and toes in congenital heart disease, nevertheless it is a feature of this disease which very often is wanting. It is in pulmonary atresia and stenosis that clubbing most commonly arises, and it is in these conditions that congestion is most frequently observed.

Osteo-arthropathy of the Marie and Bamberger type, as osteo-periostitis of the distal extremities of the long bones as the seat of election with thickening of the carpal and tarsal bones and bulbous enlargement of the terminal phalangeal bones associated with parrot-beak-like nail changes and fingers of drumstick-like appearance is most rare in children. The number of cases reported can be counted on the fingers.

Those cases that have been recorded by Royal Whitman, Davis and Gillet have been associated with chronic lung diseases. Bamberger's case was aged 7 years, and suffered from pulmonary stenosis, congenital cyanosis, and a tuberculous lung. Thorburn's case had mitral disease only. A few cases in association with chronic lung disease have been recorded by Moussous, Gillet, Morzard, Marfan and Miller, in which the characteristic beak-like finger-nails occurring with osteo-periostitis of the terminal phalanges were the sole changes. D. F. M. Miller* provides a picture and a radiogram of a child, aged 8 years, and contrasts pictures of the fingers in the case with that of a case of congenital heart disease in a child, aged 7 years.

Of all the cases recorded that of Royal Whitman,† in a girl, aged 8 years, was the most extensive. There was a deposit of new periosteal bone upon the shafts of the phalanges, upon the metacarpal and metatarsal bones, and upon the lower third of the bones of the lower arm and leg. The knees and ankles and wrists were enlarged from thickening of the capsules and the soft parts and effusion into the joints. Under the section dealing with the blood changes I have drawn attention to a case of my own in a child aged $3\frac{9}{12}$ years with cirrhosis of the lung and bronchiectasis where the phalanges and metacarpal bones were thickened.

Cases have been recorded by Weill and Mouriquand‡ and by Variot in congenital heart disease in which to the naked eye the appearances of the finger-tips and toes, the wrists and the insteps

* 'Trans. Amer. Pediat. Soc.,' vol. xvi, pp. 267-77, 1904-05.

† "Secondary Pulmonary Hypertrophic Osteo-arthropathy complicating Pott's Disease in a Child," 'Pediatrics,' vol. vii, 1899, pp. 154-162. Illustrated with photographs and a skiagram of the hands and forearms.

‡ 'Lyon Med.,' 1908, No. 15, p. 844.

at once suggested pulmonary osteo-arthritis, but when radiograms were made it was found that only the soft parts were involved.

A case of osteo-arthritis occurring in congenital heart disease in a woman, aged 21 years, has been recorded by Batty Shaw and R. Higham Cooper.* Clubbing of the fingers and toes and cyanosis were well marked, and there was a systolic murmur best heard over the third left interspace. There was no bony increase in the terminal phalanges of the fingers. The lower ends of the tibiae and fibulae were thickened. The bones of the forearms and wrists were slightly swollen, and also the shafts of the metacarpal and phalangeal bones. The opsonic index for tubercle was normal.

Ophthalmoscopic Appearances.

Ophthalmoscopic examination in cases of marked congestion reveals tortuous retinal blood-vessels of which the veins are very large. The blood in the arteries looks decidedly venous, though they are not quite so dark coloured as the veins. The red reflex, which is of cyanosed appearance, often appears to start from the physiological pit, and the number of vessels on the face of the disc appears to be greatly increased. In children where the cyanosis amounts to but little more than a ruddy bucolic appearance a want of the usual colour contrast between the arteries and veins is quite noticeable. The retinal blood-vessels early display evidences of congestion by enlargement and tortuosity of both arteries and veins. If there be considerable cyanosis retinae, as sometimes is the case, without the associated appearance of curly retinal vessels, such an ophthalmoscopic finding, although not proof that there is no narrowing of the pulmonary region, nevertheless suggests that the pulmonary tract is either not involved or that right-sided muscular compensation is sufficient to overcome the obstruction.

Blood Changes.

Blood changes such as polycythæmia, macrocythæmia, and increased viscosity along with a by no means invariable increase in the hæmoglobin are not uncommon. In one blue child under my care, aged $2\frac{1}{2}$ years, with clubbed fingers and toes,† who had been blue since birth, there was a blood-count of 7,880,000 per c.mm., and the hæmoglobin was 122 per cent. That is the largest number of red cells that I have met with in congenital heart disease. The heart was

* 'Clin. Soc. Trans.,' vol. xl, p. 257, March the 22nd, 1907.

† 'Reports of the Society for the Study of Disease in Children,' vol. v, p. 48.

large, the interventricular and auricular septa defective, and the aorta rose from both ventricles. Hypoplasia of the pulmonary artery and its branches was a marked feature starting at the orifice.

In Planchu and Gardère's* infant, a child, aged 6 weeks, in whom cyanosis was slight but worse on crying, the polycythæmia amounted to 9,000,000 per c.mm. This was with a heart of practically two cavities. Bach,† in a child, aged 7 weeks, found no less than 11,400,000 per c.mm. There was atresia of the pulmonary artery, a patent ductus arteriosus, cicatricial occlusion of the tricuspid valve, and a rudimentary right ventricle.

Many of the children under my care with polycythæmia have shown a deficiency in the hæmoglobin rather than an increase. In a blue infant, aged 1 year, with clubbed fingers and toes and lips, and finger- and toe-tips of purple hue, the blood-count amounted to 5,400,000 per c.mm. red, with a hæmoglobin percentage of 55 only. In an infant with intermittent cyanosis Variot found intermittent polycythæmia. Weil‡ has shown in two children with morbus cœrulenus and congenital morbus cordis increase in the red bone-marrow, and his observations have been confirmed. This increase of red blood-corpuscle producing areas must be viewed as compensatory to the state of chronic suffocation, which is the normal condition of these patients. Parkes Weber,§ when recently reporting a case of congenital heart disease with polycythæmia, has called attention to the observations by Lorrain Smith and H. L. M'Kisack on a boy, aged 12 years, with chronic cyanosis, who demonstrated not only a relative polycythæmia, but also that the total amount of blood in the body was far beyond the normal standard—nearly double. In Weber's case, a youth, aged 22 years, compensatory polycythæmia was extreme, the blood-count amounting to 10,300,000 per c.mm.

The most intense polycythæmia that I have met with in a child occurred in a case|| of cirrhosis and bronchiectasis of the lung in a boy, aged $3\frac{1}{2}$ years. He was very blue, clubbing of the fingers and toes was a marked feature, and the phalanges of the hands and the metacarpal bones appeared to be thickened.¶ There was extension of the cardiac dulness to the right. A blood-count gave 8,270,000 red corpuscles per c.mm.

* *Loc. cit.*

† 'Arch. f. Kinderheilk.,' p. 31, 1909.

‡ 'Compt. Rend. Soc. de Biol., Paris,' 1901, vol. liii, p. 713.

§ 'A Case of Congenital Heart Disease,' 'Edin. Med. Journ.,' 1909.

|| 'A Case of Cirrhosis of the Lung, Bronchiectasis,' 'Reports of the Society for the Study of Disease in Children,' vol. vi, p. 59.

¶ *Vide* observations on osteoarthropathy.

Among other symptoms of congenital morbus cordis respiratory acceleration is the rule, though it does not always occur when the child is at rest. In some cardiac pain is a feature. In a case reported by Hand junior,* in a case of pulmonary atresia, attacks of dyspnoea were associated with heart pain, an angina pectoris, and during the attacks the respirations were slow and laboured. The pulse is often accelerated. In only one form of malformation is it slowed, and that happens sometimes in pulmonary stenosis. The temperature is frequently subnormal. Growth and nutrition may both be faulty, and infantilism sometimes results.

Congenital Heart-murmurs.

Congenital heart-murmurs are of various characters. They may be heard as harsh, roaring, churning, growling, sawing, twanging, rushing, or rasping noises. Musical bruits are not common in my experience. If murmurs of such character be heard in a child under three years of age, and if they be conducted over wide areas, the presumption is strong that the affection is of congenital origin. Soft, low, very faint bruits are sometimes present. Murmurs are usually systolic, occasionally pre-systolic or diastolic, and there is that peculiar rumbling murmur carried through the systole and diastole, which points to a patent ductus arteriosus or a communication between the pulmonary artery and the aorta. Sometimes the bruits become inaudible shortly before death, or during a paroxysm of cyanosis, and I have noticed a loud murmur to almost disappear under the influence of an anæsthetic. A murmur may be detected at one auscultation, and cannot be heard at the next, and the causes for this temporary disappearance are not quite clear. Murmurs are also influenced by posture and by respiration. In regard to conduction, in some instances systolic bruits may be traced along the arteries over the brachials as far as the bends of the elbows, and also be heard in the thighs along the course of the femorals. They can not only be followed up the arteries of the neck, but exceptionally can be heard by applying the ear to the vertex.

It is now fifteen years or more since I first tried to arrive at some idea as to the nature of the malformation† by studying the murmurs produced at the various cardiac orifices. Since then I have been able to extend my clinical experiences, and the result of my observations, many of which have been verified, I will bring to your notice

* 'Trans. American Pediatric Society,' vol. xx, 1909, p. 10.

† 'Congenital Affections of the Heart; Stethoscopic Signs,' 1894.

under the various sections into which I have divided the subject now before us.

In only a small proportion of the cases are murmurs absent. In my series this occurred in 7 per cent.

Thrills are not infrequent; they are usually systolic, occasionally diastolic, or even pre-systolic. These purring tremors may be localised to the site at which they are produced or be of wide conduction. Further, the site of greatest intensity by no means necessarily corresponds to the seat of production. A systolic thrill of greatest intensity at the second left interspace and conducted towards the corresponding clavicle is, however, pathognomonic of patent ductus arteriosus. A systolic thrill may be felt at the episternal notch over the aorta and be conducted into the carotids and subclavians.

Defects in the Interventricular Septum.

Defects in the interventricular septum are the most common of all cardiac malformations. They are associated mostly with stenosis and atresia of the pulmonary artery, transposition of the great vessels, and occlusion of the tricuspid orifice. The combination of pulmonary stenosis, deviation of the aorta to the right, and patent septum ventriculorum is one of the most usual forms of congenital morbus cordis. While interventricular septal defects are very common in association with other cardiac abnormalities they are rare without combined congenital cardiac defect. Starek* stated that he had never seen a defective septum without an associated anomaly of the pulmonary valves during life, but he had the record of one autopsy in which this rare condition existed. In a case recorded by Willcockst in an infant, aged 3 weeks, there was a patent septum ventriculorum without other congenital defect. In a male under my care, aged 3 months, whose case has not been published, there was a perforation of this septum the size of a goose-quill just below the aortic valves. The sigmoid flexure was much enlarged and lay in the right iliac fossa. In a girl, aged 8 months, also hitherto unpublished, I found a septal perforation in the same situation. The perforation admitted a rod 5 mm. in diameter and the ductus arteriosus was patent to the extent of a rod of 6 mm. In a specimen from a child, aged 2 years,† I exhibited to the Society for the Study

* 'Pediatrics,' vol. ix, 1900.

† 'Path. Soc. Trans.,' 1886-7.

‡ 'Reports of the Society for the Study of Disease in Children, vol. vi, pp. 241-2.

of Disease in Children in 1906, there was a patent septum ventriculorum $\frac{1}{4}$ in. in diameter below the aortic valves. There were two cusps to the pulmonary valve and an ill-marked division in one of them, and the pulmonary artery was dilated. In a girl, aged 8 years, who died of malignant endocarditis of the aortic and mitral valves, this septal defect was the sole congenital anomaly, and it was not suspected during life. This defect may occur in association with irregularity in the distribution of the veins to the heart, such as in a case recorded by W. C. Chaffey,* of Brighton, which happened in a female infant, aged 10 weeks. A part of the blood returning from the head and upper extremity entered the heart by way of the left duct of Cuvier and the coronary sinus.

As was found in the cases I have just related, the commonest situation for perforate septum ventriculorum is directly beneath the aortic valves and just in front of the undefended space. In front of it lies the fleshy part of the septum and behind it the membranous. On the right side of the heart this opening will be found beneath the septal and anterior cusps of the tricuspid valve.

It is rare for a perforation to be found in the anterior fleshy part. In a case reported by Conpland † there was an aperture the size of a No. 12 catheter passing into the conus of the pulmonary artery just below the pulmonary valve. When viewed from the conus side an aortic cusp partially occluded the septal deficiency. Defects in the pars membranacea, the undefended space, are not uncommon, and perforations may be found there varying in size from a pin puncture to an area of considerable extent, bounded in front and below by the rounded muscular border of the ventricular septum. This latter was well seen in the heart of a Mongol, aged 5 months, with a single auricle, associated with fused mitral and tricuspid valves which formed two cusps, which I showed to the Society for the Study of Disease in Children.‡

The septum may be absent, as in the cor triloculare, and as in a case shown by Ernest Clarke,§ where the right auricle rested on the thickened wall of the single ventricle, and where the pulmonary artery and aorta were one tube and did not bifurcate until $\frac{1}{2}$ in. beyond their combined origin. Or the septum may be represented by a falciform ridge springing from the lower and anterior wall of the ventricle. Or irregular defects may arise in it.

* 'Path. Soc. Trans.,' 1885, vol. xxxvi, p. 175.

† *Ibid.*, 1879, vol. xxx, p. 266.

‡ 'Reports of the Society for the Study of Disease in Children,' vol. viii, p. 340, pl. ix.

§ 'Path. Soc. Trans.,' 1885, vol. xxxvi, p. 178.

Changes in the heart muscle do not necessarily follow septal defects. In some cases, however, hypertrophy and dilatation of both ventricles are seen, and this is especially likely to occur on the right side. In my child,* aged 2 years, the right ventricle was hypertrophied, the left normal. In the infant aged 3 months there was no hypertrophy, but in the infant aged 8 months there was hypertrophy and dilatation of the right ventricle.

In these three cases in regard to cyanosis, the child aged 2 years was born a "blue baby," but she was not blue; in the infant aged 3 months the lips were of good colour, the face pale; in the child aged 8 months the lips were rather lilac coloured when crying, but in this infant there was a patent ductus arteriosus also. According to Mande Abbott,† of 32 primary defects collected from the literature, one of which included a case of my own,‡ cyanosis was absent in 16, slight in 8, moderate in 3, and marked in 3. Cyanosis is usually marked where there is deviation of the aorta to the right. In primary septal defects the pulmonary artery is apt to be dilated, and this was noticed in two of my children.

Defects in the septum do not always produce murmurs, but when bruits are present the following characteristics have been noticed by me in the pure cases which have come under my observation. In the child, aged 2 years, there was a loud rough systolic bruit audible all over the chest, the point of maximum intensity being over the pulmonary area. It was not audible in the big vessels of the neck; the second pulmonary sound was accentuated. In the infant, aged 8 months, the systolic bruit was heard loudest at the junction of the xiphoid with the gladiolus on the left, and it was conducted a short way into the axilla. A faint systolic bruit was heard only occasionally at the left base. It was not transmitted to the neck-vessels. The second pulmonary sound was accentuated. In the infant, aged 3 months, there was a loud systolic murmur at the left base, which was traceable as far as the left mid-axillary line. The second sounds were normal, and in this infant the heart was not enlarged. In the oldest child there was a marked systolic thrill all over the cardiac area, and in the child aged 8 months a systolic thrill was occasionally felt at the left base, but this might have been due to the patent ductus arteriosus, and in the infant aged 3 months it was absent.

(To be continued.)

* 'Reports of the Society for the Study of Disease in Children,' vol. vi, p. 241.

† 'System of Medicine' (Osler and McCrae), vol. iv.

‡ 'Reports of the Society for the Study of Disease in Children,' vol. vi, p. 241.

TREATMENT OF ADVANCED CASES OF ACUTE DIAPHYSITIS.

By H. M. W. GRAY, M.B., F.R.C.S.Ed.,

Surgeon and Lecturer on Clinical Surgery, Aberdeen Royal Infirmary.

G. M—, female, aged 11 years, was admitted to hospital on March the 31st, 1908, suffering from acute suppurative diaphysitis or osteomyelitis of the upper half of the shaft of the left tibia. The history and clinical symptoms were typical of such a case. The upper epiphysis and neighbouring knee-joint were, so far as could be ascertained, free from disease. The child was at once etherised and the limb thoroughly disinfected. An incision, slightly internal to the crest of the tibia, was made from the upper limit to $\frac{3}{4}$ in. below the lower limit of denudation of periosteum, down to bone in its whole extent. The subperiosteal cavity was washed out, first with peroxide of hydrogen (10 per cent.) and then with saline solution. The periosteum, corresponding in extent with the lower $\frac{3}{4}$ in. of the incision, which was adherent to bone and healthy, was elevated off the bone, which was then chiselled across at the lower end of the incision. The upper half of the tibia was then easily lifted out of its periosteal bed, as it was only very loosely adherent to the epiphysial cartilage. The cavity thus made was carefully washed out as before, dried, and packed lightly with sterile gauze wrung out of peroxide of hydrogen (3 per cent.). The opening of the medullary cavity of the remaining part of the tibia was previously smeared over with Beck's bismuth paste, so as to prevent any possibly infective material from penetrating to the healthy medullary cavity of the lower part of the bone (Fig. 1). The limb was then enveloped in sterile dressings and a moulded splint applied (made of plaster-of-Paris bandages soaked in biniodide of mercury [1 in 2000] solution).

The temperature fell to normal in a few hours. Three days later the child was anæsthetised again and the gauze was removed. The cavity was found to be clean and dry, free from pus. Thin catgut interrupted sutures were passed through the edges of the periosteum and left untied. Beck's bismuth paste was poured into the cavity, allowed to set partially, and then the catgut sutures were tied. Bismuth paste which oozed out between the stitches was lightly wiped away and the skin was carefully sutured with fine catgut. Dressings were applied and the limb placed again in the plaster splint.

The subsequent history is of most interest in connection with the

rapid and practically complete regeneration of bone which took place. This is seen by referring to Figs. 2, 3, and 4, which represent skiagrams taken respectively fifteen days, six weeks, and thirteen months after operation. Small sinuses formed, one at the upper and one at the lower end of the wound. Through the upper sinus the greater part of the bismuth paste was gradually pushed out—as the



FIG. 1.—Skiagram taken April the 1st, 1908. Absence of any shadow corresponding to the periosteal tube of the upper half of the diaphysis of the tibia. Shows the mass of bismuth paste closing the medullary cavity of the lower half.

periosteal cavity became filled with “granulation tissue” and bone. The discharge was a thin, honey-like fluid. At no time was there an ordinary purulent discharge. The lower sinus was found to be due to the presence of a thin flake of necrosed bone, which separated and was extruded during the sixth month. At the end of this month the patient was able to walk freely without pain. At the present time, thirteen months after operation, she has perfect use

of the limb, has no discomfort of any kind, and on examination, apart from the scar, one can make out scarcely any abnormality of the bone. On careful measurement from the upper margin of the internal tuberosity to the tip of the internal malleolus it is found that the affected tibia is $\frac{1}{4}$ in. shorter than the other. It was

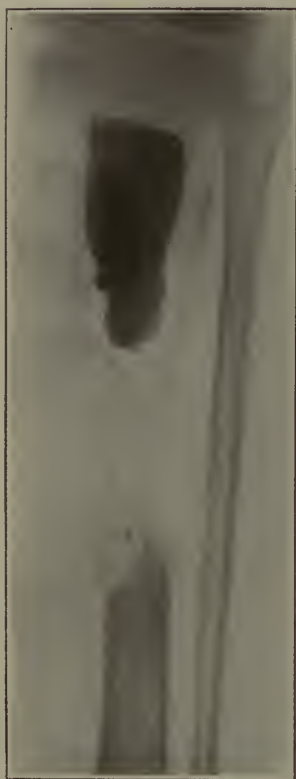


FIG. 2.—Shows slight growth of periosteal bone. The dark shadow is a mass of bismuth paste. Skiagram taken April the 15th, 1908.



FIG. 3.—Shows greater growth of periosteal bone. Smaller amount of bismuth paste than in Fig. 2. Skiagram taken May the 14th, 1908.

thought that the girl had grown four or five inches during the past year. Unfortunately measurements were not taken when she was in hospital.

One may quote, as being representative of sound modern surgical procedure in such cases, what is said in Keen's 'Surgery,' vol. ii, pp. 37-40: "Treatment of the acute stage: In the acute stage there is suppuration of the marrow, more or less extended through-

out the shaft, with often a subperiosteal abscess and perhaps abscess of the soft parts. The indications are the same as in any other acute suppuration, *i. e.* the pus must be evacuated and the bone cavity must be drained. This demands not only an incision into the soft parts, but an opening into the shaft of the bone. For evacuation of the bone at first a good sized trephine button, $\frac{1}{2}$ in. in diameter,



FIG. 4.—Shows leg-bones of both sides. The skiagram on right shows practically complete regeneration of tibia—no medullary cavity apparent yet. Note epiphysial "line." Taken May, 1909.

of cortical bone should be removed. If pus escapes from the marrow, this trephine hole should be enlarged by chisel and gouge, and should be extended along the shaft so long as definite pus escapes from the marrow. . . . Treatment of the subacute stage: After the acute process has subsided, either from spontaneous or artificial evacuation of the pus . . . the treatment . . . may be divided into three classes: (1) Removal of the

necrotic sequestrum before a definite involucrum has been formed, while the periosteum, although proliferating, is still plastic; (2) removal of the sequestrum just as soon as a sufficient amount of involucrum has been formed to carry on the function of the original shaft. In the early stages such a young involucrum has a limited power of central growth, and in favourable cases may obliterate the cavity left by the removal of the sequestrum. (3) Removal of the sequestrum after the involucrum has become dense bone, like ordinary cortical bone. . . . Removal of sequestrum while periosteum is plastic. . . . The time for this operation is when the periosteum has begun well-marked ossification in its deeper layers, and yet ossification is not so far advanced as to form a rigid periosteal shell. The time varies somewhat in different cases, but the average time is about the eighth week after the acute infection has been stopped by evacuation of the pus."

The treatment which I have detailed above in the description of an illustrative case is in advance of the treatment just quoted because (1) time, to the extent of at least two months, is saved to the patient; (2) the focus of infection, and, at the same time, a cause of continued irritation and suppuration is *completely* got rid of at the first operation (this may sometimes turn the scale against a fatal issue); (3) multiple operations are dispensed with. The manipulations carried out under anæsthesia when the original gauze plugging is removed do not involve any strain on the patient's powers of recovery.

What is exactly the best material with which to fill the periosteal cavity is not certain, nor is it, indeed, certain that such internal support for the periosteum is necessary at all. In the case of a thin bone like the fibula it certainly is not necessary, as one of my cases showed. In the skiagrams, Figs. 2 and 3, one can see that the periosteal tube is not supported by any internal mass of bismuth paste in the lower part, yet in Fig. 4 one sees that the bone has been reproduced almost as thoroughly in this part as in the part above where the internal support was present.

If such material *is* found to be necessary, I have the feeling that some plastic mass, such as Beck's bismuth paste, is preferable to a more solid, less extrusable substance as, for example, plaster-of-Paris. If infection of the periosteal cavity recurs, such a foreign material as gypsum acts in the same way as a "natural" sequestrum and has to be removed in the same way. The mildly antiseptic, semi-solid bismuth paste has the advantages of preventing infection, of being easily extruded by the growing tissues, and of being more absorbable.

This method of treatment does not interfere with the function of the epiphysial cartilage. An equally good result was obtained in another case where the whole shaft of the tibia was affected and was removed. Even although both epiphysial cartilages were exposed by this removal yet after a year there was no appreciable shortening of the limb.

In cases where there is only a single long bone in the part affected (femur, humerus) it is probably wiser to follow the lines laid down by Dr. Nichols in Keen's 'Surgery' (vol. ii, p. 41) and wait, before removing the shaft, until the periosteum is rigid: "The difficulty of judging when this time has arrived is considerable, and can best be judged by means of the X ray."

I have called such cases as these under discussion "advanced" cases of diaphysitis. The inflammation should be nipped in the bud at the stage which some would call "acute epiphysitis," obviously an erroneous term because the focus begins nearly always in the diaphysis. When the pathology and symptoms of the incipient stage of the usual suppurative "osteomyelitis" become more understood, and when there is greater appreciation of what the simple modern treatment of this stage entails in the saving of time, trouble and danger, so will such cases become uncommon. Timely use of drill, burr, fine chisel or gouge at the tender spot in the end of the diaphysis will sometimes save a limb or a life, and in any case will prevent a prolonged illness.

FOUR CASES OF ACUTE MENINGITIS IN CHILDREN.

By FREDERICK TRESILIAN, M.D., F.R.C.P.Ed.

THE four cases, of which I have given a description below, offer, by their comparison, an opportunity of studying the different types of one of the most interesting affections in childhood. As they occurred in private practice no opportunity of a post-mortem examination was possible in the one case that died; and no means was available of diagnosis by lumbar puncture. Though they had much in common the types were distinctly different, and the symptoms and signs were peculiar in each case.

The first was one of tubercular meningitis, which began in a hemiplegic form and which at first took me in, for reasons which will be given.

CASE 1.—A female child, aged 4 years, seen on September the 20th, 1904. She was quite well until September the 20th, when, on getting up from a chair, she fell, and her mother perceived that she could not stand on her left leg, which doubled up if she tried to put weight on it. During that morning, also, she was sick two or three times. She complained that she did not feel well, but of nothing else definite.

This September was warm weather. An interesting point was that her elder sister, when about two years old, had infantile paralysis about four years previously, the attack occurring in July, which had left paralysis with wasting and shortening in the left leg.

When I saw the second child in the afternoon of September the 20th she seemed quite well, except that she could not move the left leg, which was limp and flaccid, and there was no knee-jerk or plantar reflex. I thought that it was possibly another case of infantile paralysis, but could find no evidence of affection of any other limbs or muscles save in the left leg, which was somewhat unusual.

Next day, September the 21st, there was similar flaccid paralysis with loss of knee-jerk and plantar reflex, and she complained of pain in the leg and back; there had been no sickness. Temperature was normal; pulse quick but regular; respiration normal. No headache; no cerebral symptoms, save picking at her lips, which was suspicious.

The condition remained the same until September the 24th to 25th, when in the early morning she awoke delirious and much worse. I saw her early and found irregular breathing and some dyspnoea. Pupils were dilated; temperature normal; pulse quick and feeble. The condition of the leg was the same, with absent knee-jerk and plantar reflex, both of which were present on the right, but not so brisk as on the previous day. There was no Kernig and no head retraction; she had incontinence of urine; there was flaccid paralysis of left arm. The bowels were constipated; temperature 101° – 102° F.

On September the 27th, three days later, the condition of arm and leg were the same; the pupils were dilated and inactive to light. There was some slight stupor; incontinence of urine. She died that same day, being actually comatose only for a few hours before death. There were no convulsions all through.

This must have been a case of tubercular meningitis of an acute type. I could find no evidence of tubercles of choroid, though I looked each day for them, which would have been the one point necessary to make the diagnosis of the condition absolute. There was no cardiac lesion to cause embolism, no rigors, and even no

pyrexia until the end, which is very unusual in any form of meningitis. I could not obtain a necropsy.

I have seen tubercular meningitis occur before in a somewhat hemiplegic form, but there have usually been convulsions somewhat of the Jacksonian type leaving a paresis after them.

CASE 2.—This was an ordinary case of posterior basic meningitis in an infant, which left behind it the very unusual sequela of complete deafness only.

A female baby, aged 8 months. Illness began on September the 11th, 1905. She was restless and would not sleep, and she had a convulsion that day. She was teething and had cut her teeth irregularly, the upper lateral incisors coming through first and then the upper right central incisor. The left upper central incisor was close to eruption and the gum was tense, tender and swollen. She had no more convulsions, but the next day she was very restless and strange and twitched a great deal. She was sick also on the first day. The child was well nourished and healthy, with no appearance of rickets. She had been fed on the breast. Action of bowels was regular.

On September the 16th she got retraction of the head markedly and she resented any effort to put it forward. Eyes were opened and staring, no photophobia, and she had convulsive tonic spasm of the hands. She was very restless and slept badly.

September the 17th: Head much retracted, cough and dyspnoea. Bronchitis at backs of lungs; no consolidation or evidence of pneumonia. Temperature 102° F. Knee-jerks normal, no Kernig. I lanced the gum over the left lateral incisor and gave liq. hydrarg. perchlor. five minims every three hours with innunction of mercury ointment into neck and occiput.

They had lost a child, aged 5 years, from tubercular meningitis four and three quarter years before. I attended her. This child had apparently had basic meningitis when three and a half years old, and was absolutely deaf after it. She had just learned to talk, but after this illness her talking gradually went, and though she never became quite a deaf-mute, she gradually lost what little speech she had acquired.

September the 22nd (11th day): Child is much better. Head retraction has almost gone; she looks about her much more and sleeps well. Upper left central incisor is well through and the left lower central incisor has also erupted.

The next note is January the 31st, 1906: The mother brought the baby, having discovered that she was deaf. I thought, however,

that the child could hear a Galton's whistle and tuning-fork in the air when close to the ears. The eyes looked normal.

February the 17th, 1906: The child looks bright and well. I could not be at all sure that she heard a Galton's whistle or tuning-fork by air-conduction, and she did not pay much attention to a tuning-fork held on the skull. I have seen the child occasionally since, and there is no doubt that she is absolutely deaf. An interesting point is as to whether the deafness is to be attributed to the effects of the meningitis or to destructive effects of the initial convulsion. If due to the meningitis, it would be the effect of lesions of the trunk of the nerve above the internal auditory meatus. If due to the convulsion it would be central, meaning a destructive lesion of the nerve-cells in the occipital lobes and angular gyrus. The symptoms in either condition would be identical, and the same as those of an acute destructive lesion of the labyrinth.

The next case was a typical and severe one of acute cerebro-spinal meningitis.

CASE 3.—A. H—, male, aged 11 years. Illness began suddenly on March the 8th, 1903, with repeated vomiting, stomach pain and rigors, followed by intense headache and backache. There was slight diarrhoea at the onset, which soon ceased, and constipation ensued. The sickness continued for two days.

The boy complained of intense vertical and frontal headache, and of severe pain in the back when he moved, all up the spine. Last night he got out of bed and came into his mother's room complaining of these pains. Pulse was 120; temperature 102° F. Tongue furred; skin hot and dry. Occasional internal strabismus.

March the 15th: Symptoms about the same; headache, chiefly frontal, severe, and paroxysmal. Temperature lower; double optic neuritis.

March the 18th: Temperature normal. Optic neuritis less severe. Kernig's sign present on both sides. Mental condition clearer. Knee-jerks feeble but present.

March the 21st: Admitted to Hospital. Condition the same. Phenacetin relieves his head. Gave hyd. \bar{c} creta.

March the 27th: Severe paroxysms of headache still occur, chiefly frontal. Sleeps occasionally. Takes food well. Superficial reflexes very exaggerated with hyperæsthetic condition of the skin. Kernig positive on both sides. Rigidity of legs, especially right one. Knee-jerks absent. Flexor response on both sides.

April the 3rd: Headache intense and more constant. Optic neuritis still marked. I gave liq. hydrarg. perchlor. ʒss *t.i.d.s.* and ice-cap to head.

April the 10th: Still intense headache. Kernig and optic neuritis still present. Tongue cleaner. Rigidity of legs. Weak action of left external rectus.

April the 16th: Temperature fell to normal and remained so. Marked improvement began and continued.

May the 13th: Knee-jerk present on the left side and a remnant of a Kernig on same side. No knee-jerk on right side. Rigidity much less. General condition good. From this time on he convalesced and did well.

His optic discs recovered perfectly, with no subsequent atrophy, although the severity of the neuritis closely approached that of a "choked disc."

I feel quite confident of the therapeutic effects of the mercury given on April the 3rd; improvement set in so soon afterwards, with decline of temperature and gradual disappearance of the characteristic signs of the disease.

CASE 4: *Posterior basic meningitis*.—No exact dates taken. Male child, aged 3 years. Illness came on with headache, sickness and fever, crying out, and finally convulsions, followed by stupor and coma and marked head retraction. The screaming was incessant and somewhat like that of tubercular meningitis. There had been no causal head injury and there was no ear disease. The eyes were open and staring with dilated pupils inactive to light. No photophobia. There was a spastic paralysis of the right arm, which was rigid with the fingers tightly clenched. A bed-sore formed on the sacrum; there was constipation, and urine was passed involuntarily. Corneal reflex was absent. The knee-jerk was absent on the right side. The eyes were frequently but not constantly deviated to the right side. This comatose condition continued with partial remissions of a few hours for fourteen days, during which time there were frequent attacks of convulsions, which were general and bilateral, and head retraction was marked during the same period. There was no history of tubercle in the family. The treatment consisted in shaving the head and constant application of ice. Blisters on mastoids. Inunction daily of ung. hydrarg. with equal parts of vaseline, and liq. hyd. perchl. mv every four hours. The gums became white and spongy and salivation occurred. The child improved and ultimately got well in about a month. Coma disappeared; pupil reflex returned. Spasm of arm disappeared, and convulsions decreased in frequency and severity. During convalescence his temperature ran up suddenly to 103° F., but a few doses of calomel set it right. There was no relapse of original symptoms and recovery was complete.

These four cases offer good illustrations of the forms of meningitis occurring in infancy otherwise than ordinary tubercular. They exhibit altogether all the signs and symptoms met with in non-tubercular meningitis, and even though they have many points in common there are distinctions peculiar to each case. I cannot help thinking that they show in a marked degree the usefulness of mercury in the treatment of meningitis. I believe in it firmly, and in the last case I stuck to it right through without change or cessation in what seemed to be a hopeless case. This was one of the few cases I have ever given mercury to produce salivation. Its absorbing powers are marked, and are frequently demonstrated in its application to tubercular peritonitis and enteritis and in ocular diseases. I recently saw a girl who looked as if she was moribund and hopeless from tubercular enteritis, and who got quite well under daily applications of unguent. hydrargyri. It might be used with advantage as an external application in cases of serous effusion in pleurisy, tubercular or otherwise.

I trust these short notes will be evidence not only of the great clinical interest to be found in meningitis, but also will impress the fact that, like pneumonia, meningitis is a disease worthy of pegging at vigorously, and that in mercury one has a drug of a quite decided value in the treatment of the disease.

The Royal Society of Medicine.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

Meeting held in the Scotch Capital, Dr. George Carpenter, Vice-President of the Society and Chairman of Council of the Section, presiding.

THE Annual Meeting in Great Britain of the Children's Section of this Society was held at Edinburgh on June the 18th. The members of the Section were received with cordial hospitality by the medical profession in Edinburgh, and were entertained to lunch before the meetings.

At the meeting in the afternoon there was first a discussion of cases. Tea was then served, after which papers were read. On the following day a number of extremely interesting cases were shown at the Edinburgh Royal Hospital for Sick Children to those members who remained in Edinburgh.

CASES.

A Case of Patent Ductus Arteriosus in a Young Woman was shown by Dr. G. A. GIBSON.

The CHAIRMAN (Dr. GEORGE CARPENTER) said that it was seldom such cases were seen clinically. In this condition there might be a purely systolic

murmur and not a double murmur. He suggested that an X-ray photograph should be taken of the case, as it had been shown that patent ductus arteriosus could be recognised by this means. The malady was not infrequently associated with other congenital somatic malformations.

A Case of Delayed Rickets was shown by Dr. BURNET.

Dr. G. A. SUTHERLAND asked if the rickets had developed recently, or if they had persisted from infancy.

Mr. A. H. TUBBY thought that rickets was a disorder beginning in childhood, and continuing with outbreaks at intervals afterwards, the causes of which are unknown.

Dr. SPRIGGS referred to recent work on exercise as a cause of rickets.

Dr. Macalister, Mr. Harold Stiles, and the Chairman (Dr. George Carpenter) also discussed the case.

A Case of Deformity of the Cervical Spine and the Right Scapula, in which there was a fold of skin at the side of the neck reaching from the head to the shoulder, was shown by Mr. SCOTT CARMICHAEL.

Mr. TUBBY said it was one of those curious cases known as Sprengel's shoulder. The right scapula differed in shape from the left. The movements of the shoulder were limited. He also suspected the presence of supernumerary cervical ribs. The skin folds, which he had not seen before, showed, he thought, the traction of the skin in the attempted descent of the scapula.

The CHAIRMAN (Dr. GEORGE CARPENTER) asked if there were any other deformities, and—

Mr. TUBBY said that in about one third of the cases congenital heart disease was associated.

A Case after Cholecystenterostomy for Traumatic Obstruction of the Common Bile-Duct was shown by Mr. HAROLD STILES.

The CHAIRMAN (Dr. GEORGE CARPENTER) suggested that, as this case had been so successful, congenital malformations of the bile-duct could probably be treated surgically.

Dr. JOHN THOMSON said that cases of congenital malformation of the bile-duct had been operated on, but the result had always proved that the operation could not possibly have been expected to do good, as it is not a local condition but a general disease.

Dr. SPRIGGS suggested that metabolic observations should be carried out in this case, as the bile ran straight into the large intestine, and it would be interesting to see how the digestion of fats was affected by the absence of bile from the small intestine in man.

Mr. HUGH LETT referred to a case of traumatic obstruction of the bile-duct which recovered.

The CHAIRMAN (Dr. GEORGE CARPENTER) said that operation might be successful in congenital cases in which the stenosis was merely related to the common duct.

Two Girls in whom the Ureters were Transplanted into the Pelvic Colon for Incontinence due to Epispadias without Extroversion of the Bladder were shown by Mr. HAROLD STILES. The operation had relieved the incontinence, and the kidneys had not been affected by the transplanting of the ureters into the colon.

Two Cases of Hydrocephalus were shown by Mr. HAROLD STILES, and

in each of them both common carotids had been ligatured with the object of lessening the secretion of cerebro-spinal fluid, with favourable results.

Dr. G. A. SUTHERLAND said that they all appreciated any new method of treatment of this disease. In the congenital cases there was usually a continuous flow of cerebro-spinal fluid and no blocking. It was possible to decide whether blocking of the fluid was present by means of lumbar puncture. Certain cases of syphilitic origin recovered under mercurial treatment. The special type where this operation might do good would be where there was a slight increase of secretion over absorption. Mr. Stiles had spoken very guardedly of results, but with these successes he might certainly be encouraged to continue. Dr. Sutherland referred to his former work on subdural drainage, and said he still believed in it, and some patients had certainly been cured by it.

Mr. TUBBY said that these cases were the most successful he had seen.

Dr. SPRIGGS said that Mr. Pendlebury had suggested draining the ventricles direct into the subcutaneous tissues by carrying silk directly from the ventricles, after the manner of Handley's operation for œdema of the extremities.

Dr. SUTHERLAND said that in drainage methods the great difficulty was in keeping open the passages through the cerebral tissues.

Dr. JOHN THOMSON said that in several cases he had seen a very rapid cessation of increase of the size of the head after this operation. In some cases it had done no good. The head sometimes ceased to increase without operation. He thought the operation a justifiable one.

Mr. R. H. PARRY asked if it had been performed when there was spina bifida present also.

Mr. STILES, in reply, said that his first two cases had been most successful. It was difficult to get suitable cases, and the children were often very frail and delicate. He had never seen any benefit when the cases were complicated with spina bifida. Hydrocephalus was more liable to occur after the spina bifida was cured, when the spina bifida had been excoriated or ulcerated. Congestion may be set up from the region of the spina bifida, which passes to the fourth ventricle and sets up a true secondary hydrocephalus.

Cases illustrating Resection of the Diaphysis of the Long Bones for Diffuse Tuberculous Osteomyelitis was shown by Mr. HAROLD STILES. The long bones, for instance the tibia, which had been excised sub-periosteally, were exhibited, whilst on the couch lay the patient, in whom a new tibia had grown.

Mr. TUBBY congratulated Mr. Stiles on his excellent results in these cases, which he regarded as a most important piece of work.

The CHAIRMAN (Dr. GEORGE CARPENTER) expressed a vote of thanks to the Edinburgh gentlemen who had shown cases and for giving them a most instructive afternoon. Cases had been shown which it would have been worth while coming three times the distance to see. He hoped that it might lead to further co-ordination between Edinburgh and London in the study of disease in children.

Mr. HUGH LETT, in seconding the vote of thanks, heartily endorsed the Chairman's remarks.

PAPERS.

On Symmetry and Asymmetry and their Effect in the Production of Lateral Curvature of the Spine. by Mr. A. TUBBY, London.

Mr. PARRY asked if it was Mr. Tubby's experience that the left limb was more constantly longer than the right.

Mr. TUBBY thought not.

Observations concerning the Blood in Chorea and Rheumatism, by Dr. C. J. MACALISTER, Liverpool. In experiments made upon the length of life of leucocytes in the blood-plasma of patients suffering from chorea and rheumatism, he found that when the corpuscles of a chorea patient were placed in the plasma of another chorea patient they will live nearly as long as the corpuscles of a healthy person will live in another healthy person's plasma, showing that to some extent the blood-cells have become immune to the toxin. This being so, if the toxin in acute rheumatism is similar to that in chorea, the same evidence of immunity should exist when the corpuscles of the rheumatic patient are placed in the plasma of a patient suffering from chorea. When this experiment was carried out, however, it was found that the lives of the cells were invariably shortened, and one may infer from this that at all events some difference exists between the poisons in the two conditions. Dr. Macalister also supported the observation, previously reported by Cabot, that a marked eosinophilia is present in the subjects of chorea, whereas in acute rheumatism he did not find any increase of eosinophile leucocytes. His observations confirmed the suspicion that there is less real association between chorea and rheumatism than is generally thought to be the case, and therefore that chorea may be due to infective toxæmia of a distinctive character.

On a Case of Multiple Abscesses of the Liver in a Child, secondary to Appendicitis, by Dr. R. G. McKERRON, Aberdeen.

Mr. LETT referred to the difficulty of diagnosing between subphrenic abscess and appendicitis where there was jaundice, a little swelling of the liver and gall-bladder, and a history of prolonged pain and swelling in the epigastrium. If diarrhœa, vomiting, and distension of the abdomen were present, appendicitis was the most probable cause of it.

On the Ætiology and Treatment of Hyperpyrexia in Children, by Dr. JAMES BURNET, Edinburgh. Two cases were described. The first was in a child aged 7 years, with a tuberculous family history. The temperature reached 107° F., and was effectively treated by pouring cold water over the head and neck from a jug. The child was well next day, and no cause was discovered. The second was a boy, aged 8½ years, suffering from acute rheumatism, who was being treated with ten-grain doses of sodium salicylate. The temperature rose to 107.2° F. The same treatment was adopted, followed by the application to the head of sponges wrung out of iced water. The patient made an excellent recovery. The hyperpyrexia in this case was ascribed to the development of pericarditis, though Dr. Burnet thought that the salicylates might have something to do with it, especially as the high temperature was accompanied by a maniacal state. He was doubtful as to the safety of applying an ice-bag to the chest in such cases, for this might produce a great deal of shock and perhaps collapse. He recommended tepid sponging in the first instance, followed by the application of cold to the head by sponging or ice-bag. Should these measures fail the cold douche over the head and neck should be used, the head being held over a basin or bath.

The CHAIRMAN (Dr. GEORGE CARPENTER) said he had used ice-bags in

pneumonia and found that they were borne well, except when placed over the heart, when the children collapsed at once.

Dr. SPRIGGS said he used ice poultices. They should be made quite thin with gutta-percha tissue because of the pressure. He thought that the harm done by an ice-bag over the heart in children was due to the weight. No weight of any kind should be placed on the front of the chest in a child when it was ill, owing to the impairment of respiration which was brought about mechanically.

Dr. McKERRON had not seen collapse produced by treating pericardial affections with ice.

Dr. SIMPSON said that children who liked it could keep it on very well, but in other cases it caused great discomfort. He emphasised the necessity of keeping the child packed in hot bottles while putting on the ice-bag.

On a Case of Acute Leucocythæmia in a Child aged 8 years, by Dr. C. P. LAPAGE, Manchester. The first symptoms of the illness were headaches, some wasting, and a slight discharge from the ear, with drowsiness and irritability if roused. After these symptoms had lasted for seven to eighteen days the child began to vomit and to complain of tingling and numbness of the fingers of both hands. There was no history of hæmorrhage, tonsillitis, diarrhœa, dropsy, fainting, or impairment of vision. On admission three weeks after the beginning of the illness the temperature was 100° and there were chains of enlarged glands in the axillæ, the groins, the anterior triangles of the neck, the glands being discrete and none of them larger than a pea. There was no œdema, otorrhœa, or exophthalmos. A slight degree of vomiting was present. The stools were loose, but showed no other abnormality. The spleen reached down to below the brim of the pelvis, and the liver reached to one inch below the costal margin. There were signs of consolidation at the base of the right lung. The reflexes were increased. Kernig's sign was present but not well marked. Babinski's sign was present on the right side. The blood-count gave reds 1,600,000, whites 432,000, Hb. 35 per cent., index 1.1. There was an enormous number of large lymphocytes. The blood was whitish in appearance, resembling blood mixed with pus. It was less coagulable than normal. Death occurred one week after the first symptoms. The spleen diminished in size during the last days of life. Post-mortem, that organ showed early fibrosis. The bone-marrow of the femur and sternum was red in colour, and that of the ribs apparently normal. Pneumonia was present in the lungs, and there were ecchymoses on the visceral surface of the pericardium, sections of which showed infiltration of lymphocytes. A terminal infection with streptococci and staphylococci was found.

On the Treatment of Irreducible Intussusception by Lateral Anastomosis, by Mr. R. H. PARRY, Glasgow. This method of treatment was said in the text-books to be only applicable to chronic cases. Two acute cases were referred to, one of Mr. Parry's and one of Dr. Rutherford's. On the tenth day, in Mr. Parry's case, no trace of a tumour could be felt, and this was verified by examination. Mr. Parry put forward, firstly, the simplicity and safety of the method as compared with excision; secondly, that an alternative line of treatment was afforded to that of severe manipulation in irreducible intussusception; and thirdly, the disappearance of the tumour.

Mr. HAROLD STILES said it was a most instructive paper, and a landmark in the treatment of irreducible intussusception. He had thought a good

deal about the subject and had become almost pessimistic. Patients had died after resection where he thought recovery would take place. He had been agreeably surprised that a good many cases had recovered where there had been extreme difficulty in reducing the intussusception and even after splitting the peritoneal coat. The gangrenous cases were very difficult, and his only criticism of the paper was that the treatment was hardly applicable to those. He said he had had better results when he operated as quickly as possible, and though the children often looked moribund it was wonderful, if the treatment was properly carried out—no drugs and plenty of saline by the bowel—how they recovered. Once they had got over the shock he was no longer anxious about them. He thought this method of Dr. Parry's was very sound, and he would certainly try it in cases where there was a good deal of difficulty in the attempt to reduce the intussusception.

MR. GEORGE CHIENE said if the intussusception could not be completely reduced owing to the œdema, a way of getting over the difficulty was by wrapping the portion in three or four large pieces of gauze and compressing it for three or four minutes. It was perfectly easy to do, and the child made a good recovery.

DR. PARRY, in reply, said that with wider knowledge and means of early diagnosis these difficult cases would not be so often met with, and the treatment would resolve itself into reduction in the simple way.

On the Primary Source of Infection of Glands in the Neck, by MR. E. SCOTT CARMICHAEL. By cutting sections of removed tonsils he had found tuberculous foci in a large proportion of cases.

MR. TUBBY had not discovered tuberculosis in the tonsils so often. It would be interesting to know how often the tubercle bacilli were found in adenoids, and in the different tissues of the mouth.

MR. PARRY referred to work on the matter by Dr. Nicholl, of Glasgow.

MR. LETT felt convinced the source of infection was often found in the tonsils, and the operation did not seem complete if the focus was left behind.

MR. STILES said that in those rapid forms of tuberculosis of the glands where the whole set of glands was involved in a few weeks one often found the tonsils were infected. Even if three quarters of the tonsil were removed the healing process destroyed the rest of the disease.

The CHAIRMAN (DR. GEORGE CARPENTER) moved a vote of thanks to the management of the Royal Edinburgh Hospital for Sick Children for the use of the hospital, and he asked Mr. Stiles to convey their appreciation of the privilege.

Société de Pédiatrie, Paris.

May the 18th, 1909. Bulletin No. 5.

Dermoid Cyst of the Broad Ligament.—M. VILLEMIN showed this cyst, which had a twisted pedicle, removed from a girl, aged 5 years and 2 months, who had suffered for four months from pain, vomiting, and rise of temperature, followed by diminution of the swelling and pains. There was a tumour in the right iliac fossa suggesting appendicitis or ileo-cæcal tuber-

culosis. The tumour was adherent to the cæcum, mesentery, and uterus. The ovary was free and healthy.

Treatment of Whooping-cough by Injections of Morphine.—M. COMBY gave full details of six cases; one did not improve, one improved, and four were uninfluenced by the treatment. He was of opinion that, generally speaking, these injections diminished neither the intensity nor frequency of the attacks, nor did they check vomiting nor shorten the duration of the complaint nor prevent complications. One of the cases died of broncho-pneumonia.

M. MARFAN had treated in this way eighteen cases. In four the records were unserviceable as the children had for several reasons not been sufficiently treated. Observations on the remaining cases led to the conclusion: (1) That the tolerance displayed was extraordinary, doses from $\frac{1}{3}$ to $\frac{3}{4}$ cgrm. being given; only one child was drowsy, but his urine contained 1 grm. of albumin and he died of broncho-pneumonia ten days after the second injection. (2) In ten cases the attacks were notably diminished, in three cases the result seemed doubtful, and in one case no effect was produced. (3) The effect on the general condition was good, the children being bright and had good appetites. (4) The effect on vomiting was good in spite of the ordinary emetic action of morphine. (5) The effect on tachypnœa and tachycardia was equally beneficial. (6) The duration of the disease seemed lessened, although it was difficult to be sure on this point. He was of opinion that it should not be used as a routine treatment, but in a case where the attacks were violent, prolonged, frequent, followed by vomiting and causing exhaustion he would not hesitate to have recourse to injections of morphine.

M. TRIBOULET insisted on the advantages of this treatment in severe forms of the disease; it caused no gastric disturbance as did belladonna, bromoform, etc. He was pleased to find his own experiences corroborated by those of M. Marfan, but more observations were necessary.

M. BARBIER said it was difficult to come to any definite conclusion amid the conflicting statements of MM. Comby and Marfan. He did not accept in principle the treatment of whooping-cough by morphine, but preferred expectorants. He feared that the action of morphine, like the majority of really active substances, only acted unfavourably in this disease.

M. VARIOT said that clinical facts were of more value than *à priori* arguments in estimating the value of a new treatment, and those of M. Marfan had given interesting results, which confirmed the first communication of M. Triboulet on this subject.

Note on the Leucocyte Formula in Chickenpox.—MM. WEILL and ROULIER gave the result of their observations on twenty cases, and conclude that chickenpox is characterised by a normal leucocyte formula and by the absence of abnormal forms of white corpuscles, and that the hæmatologic characters of this disease present a striking difference to those of smallpox.

Hereditary Syphilis of the Lung; Death from a Gangrenous Focus in the Opposite Lung.—M. APERT showed post-mortem specimens which presented marked dilatation of the bronchial tubes, which were surrounded by bands of fibrous tissue. The nature of these lesions offered an explanation as to the uselessness of specific treatment, and in another case of the same nature, which the author showed before the Society two years previously, considerable improvement had followed subcutaneous

injections of gomenol oil, in series of a dozen, at intervals varying from a fortnight to two months.

Painful Hyperæsthesia in Typhoid Fever in a Child, aged 10 years.—MM. PASSEAU and TIXIER read notes of this case. Simple touching evoked painful sensations in the lower limbs and lower part of the trunk, while pressure and palpation, on the contrary, called forth no complaint. The condition lasted eight days.

Tuberculous Cavities in the Liver and Hydronephrosis.—The same authors also showed specimens from a girl, aged 5 years, who died after a few weeks with symptoms of general tuberculosis. The lesions found at the autopsy were of old standing—large vomiceæ throughout the whole of the parenchyma of the liver, and a large hydronephrosis of the right kidney, which was reduced to a mere shell. Lesions of such a marked character were not exceptional, but it was rare to find them associated in the same subject.

Case of Tubercle of the Thymus in an Infant.—M. TISSIER and Mlle. FELDZER read notes of a case in M. Hutinel's clinique of a child, aged 1 year, suffering from convulsions and wasting. There was contraction of the right arm, marked rigidity, together with Kernig and Brudensky's signs. Tuberculous meningitis was confirmed by lumbar puncture. Three quarters of the thymus were invaded by the tuberculous process in different stages of development, caseous granulations and cavities. Only the lower half of the right lobe had a normal aspect. The absence of general symptoms must be attributed to functional hyperactivity of this portion. In spite of the thickness of the gland (2 cm.) there were no signs of compression. Tubercle of this organ is so rare in children that its occurrence has been denied by several authors.

VINCENT DICKINSON.

Abstracts from Current Literature.

Medicine.

The epidemiology of acute poliomyelitis. A study of thirty-five epidemics (*Amer. Journ. of Med. Sci.*, 1908, p. 647).—L. Emmett Holt and Frederic H. Bartlett have collected reports of 35 epidemics of poliomyelitis prior to the year 1907. In 23 of the epidemics the number of reported cases is less than 20; in 7 there were from 20 to 50 cases; in only 4 were there over 100. These 4 were: Australia in 1904, 108 cases; Vermont in 1894, 132 cases; in all Norway in 1905, 719 cases, and in 1906, 334 cases. The seasonal occurrence is strikingly uniform. In 33 epidemics they occurred in the hot season only, the most frequent months being July, August and September. In almost every instance the epidemic terminated with the month of October. In one Australian epidemic the months of occurrence were March and April, which correspond to October and November in our climate. Location and surroundings seem to have little influence upon the occurrence of epidemics, which have been about equally divided between country and city. The mortality was difficult to obtain in sporadic cases, but in a study of the epidemics there were found to be 201

deaths in 1659 cases, a mortality of 12·1 per cent. The great majority of the persons attacked in epidemics were children under four years of age. Their conclusions as to the communicability of acute poliomyelitis were as follows: "The occurrence of epidemics and the relation of certain groups of cases to one another in these epidemics place beyond question the statement that acute poliomyelitis is an infectious disease. Whether we can go farther and state that the disease is communicable is an open question. After carefully considering all the evidence brought together in this paper, we cannot resist the conclusion that the disease is communicable, although only to a very slight degree, one of the most striking facts being the development of the second cases within ten days after possible exposure. Positive statements, however, must be deferred until the discovery of the infectious agent."

JAMES E. H. SAWYER (Birmingham).

Acute lymphatic leukæmia (*'St. Bartholomew's Hosp. Rep.,' vol. XLIII*, edited by H. Morley Fletcher and W. McAdam Eccles).—A boy, aged 3 years, was admitted to the hospital with petechial cutaneous eruption, hæmaturia and pyrexia. In the mouth was an ulcer involving the tongue, gum and cheek, with a greyish-black foul slough, which also filled the sockets of the teeth. These were extracted; the ulcer was curetted and swabbed with pure carbolic acid. The child's condition then improved. A month later the cervical glands began to enlarge rapidly, and other glands all over the body became enlarged and pyrexia returned. A week later the spleen was found to be palpable, the gums became spongy and bled freely. The blood-count showed red corpuscles 2,570,000; white cells 482,000; mononuclear cells 97 per cent. (large form 92 per cent., small form 5 per cent.); polymorphonuclear 2 per cent.; eosinophile cells, including myelocytes, 1 per cent. The child died a week later.

JAMES E. H. SAWYER (Birmingham).

Sarcoma of the palate (*'St. Bartholomew's Hosp. Rep.,' vol. XLIII*, edited by H. Morley Fletcher and W. McAdam Eccles).—A boy, aged 5 years, was admitted to the hospital with the history of a quinsy, which had been opened three or four months previously. A swelling was present over the hard palate and anterior pillars of the fauces measuring 1 inch by $\frac{1}{2}$ inch and containing a slough in a cavity $\frac{3}{4}$ inch deep. There was profuse bleeding. A portion of the swelling when examined histologically was shown to be a mixed-celled sarcoma. The glands in the neck became affected, and the child left the hospital without operation.

JAMES E. H. SAWYER (Birmingham).

Acute bulbar paralysis (*'Med. Press,' February 3, 1909*).—At the Gesellschaft of Vienna Popper showed a boy, aged 6 years, with acute bulbar paralysis, which had for its origin poliomyelitis. At one time the paralysis seemed to recede, and the cerebral ataxia as well as the nystagmus improved. Up to that time the unsteady gait, weakness of the facialis and paralysis of the ocular muscles had been absent as well as paralysis of the extremities.

T. R. WHIPHAM.

Concerning the presence of pepsin in the stomach of the nursling (*'Jahrb. f. Kinderheilk.,' August, 1908*).—Reeve-Ramsey, after a study of the gastric juice of healthy and abnormal infants, finds that pepsin is always present in the stomach of normal breast-fed children. In acute gastro-intestinal disturbances in nurslings it is also usually to be found. In

infants suffering from pyloro-spasm pepsin and hydrochloric acid may be present in greater amounts than in normal children of the same age. The stomach of children suffering from chronic atrophy frequently contains no pepsin, though if these atrophic children begin to improve and gain in weight the presence of pepsin can again be demonstrated. The gastric juice of normal healthy children is able to transform proteid into peptone, and this is possible without the addition of any acids other than those invariably found in the stomach. The pepsin in the gastric juice is able to do active digestion if lactic acid is present without hydrochloric acid. In some cases hydrochloric and lactic acids are found even though no pepsin be present, and *per contra* pepsin can be present in the gastric juice without the presence of either hydrochloric or lactic acid. T. R. WHIPHAM.

Causes of death in whooping-cough (*Thèses de Lyon*, 1907-1908, No. 41).—A. Sarda.—Among 169 cases of whooping-cough admitted to Weill's service at the Hospice de la Charité, Lyons, between 1894 and 1907, twenty-one died—a mortality of 12.4 per cent. This figure is higher than that of cases treated at home, but compares favourably with the results obtained in other hospitals (*vide* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1907, p. 454). Fourteen deaths were due to broncho-pneumonia, which usually occurs at the height of the disease in the second or third week. Three deaths were due to tuberculosis, one to measles, and one to convulsions. The younger the child the worse the prognosis. Seventeen of the twenty-one fatal cases were less than three years old. J. D. ROLLESTON.

Lumbar puncture (*Arch. of Pediat.*, 1908, p. 738)—E. Burvill-Holmes describes the technique of the operation. He does not think it necessary to count the vertebræ, but feels with the thumb-nail for the space between the fourth and fifth lumbar vertebræ, which is on the level with the iliac crests, and thrusts the trocar through the space below (Chippault's sacro-lumbar foramen). A "dry tap" does not necessarily mean that one has failed to reach the canal. The subarachnoid space may be obliterated by inflammatory products, thus shutting off the ventricles, or the fluid may be too thick from admixture with leucocytes to flow through the needle. J. D. ROLLESTON.

Aberrant vaccinia (*Deutsch. med. Wochens.*, 1908, p. 1856)—L. Leven.—An unvaccinated woman was sent to Leven by a gynæcologist with the diagnosis of syphilis. Two large ulcers on the labia closely resembled hard chancres. The history, however, was not that of syphilis. The appearance of the lesions had been sudden and attended with shivering. The patient stated that three weeks previously she had wiped her vulva with a rag which had served as a dressing for her recently vaccinated child. Eight days later the lesions had appeared. Treatment consisted in the employment of lysol sitz baths, and the ulcers rapidly healed (*cf.* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1909, p. 36). J. D. ROLLESTON.

Digestive disorders in rickets (*La Presse Médicale*, November 18, 1908, No. 93, p. 745).—Prof. A. B. Marfan says that two kinds of disorders of digestion are found in rickets: first, those which are prodromal or accompany the onset of the complaint, consisting generally of relapsing gastro-intestinal catarrh, more rarely spasmodic dyspepsia with repeated vomiting; and secondly, those which represent the dyspepsia of confirmed

rickets, and consist of a special form of atonic dyspepsia with distended abdomen. These two kinds do not, however, represent two consecutive phases of the same process, and the author asks whether this form of dyspepsia with large flaccid abdomen is not a concomitant of rickets, constituting an integral part of this disease. He thinks it does, since it is admitted that rickets can show itself merely by slight osseous deformities which are only recognised by those who look for them systematically. As to the digestive troubles which may precede the appearance of osseous deformities and accompany the first phase of the disease, they consist most often in relapsing gastro-enteric catarrh due to defective feeding and principally to badly managed bottle feeding. This defective alimentation, *i. e.* deprivation of mother's milk, artificial feeding, premature weaning, causes first of all digestive troubles and later on the osseous deformities of rickets. Prof. Marfan is of opinion that artificial feeding and heredity, acting singly, or more frequently associated, effect a predisposition which favours to a marked degree the action of the chronic toxi-infection. He insists that the form of dyspepsia with flaccid large abdomen is rarely absent in cases of rickets whatever be its origin. His explanation is that the relaxation of the intestinal and abdominal muscular tissue which results in dilatation of the intestine and large flaccid abdomen is only a part of the general muscular atony of rickets described by Hagenbach-Burckhardt and Bing; that the slight swelling of Peyer's patches and follicles is only a part of the tendency to hyperplasia which in rickety subjects is found in the hæmato-poietic and lympho-poietic tissues.

VINCENT DICKINSON.

The causes and symptoms of simple chronic ulcer of the stomach in children (*La Clin. Infant.*, January 15, 1909, No. 2, p. 48).—**Parmentier** and **Lasnier** made this important communication to the Soc. des Hôpit., December 18, 1908. Chronic simple ulcer of the stomach in a child is so rare that such authors as Wiederhofer and Kundrat doubt its existence, while Rokitansky declared he had never met with it under the age of 14 years. Brinton only found it twice in 226 autopsies below the age of 10 years. Only about twenty cases have been recorded. The seat of the lesion does not differ markedly from that which holds good in adults. In nine autopsies the ulcer was six times in the pyloric region, three in the lesser curvature, four on the posterior surface, either cardiac or pyloric, once on the anterior surface near the cardia and once on the greater curvature. More than one ulcer was present in some cases. In sixteen cases, seven were boys and nine girls, aged from $2\frac{1}{2}$ to 14 years. As to probable causes, bad feeding and acute gastritis take the first place. In the authors' case the girl had measles and chickenpox between the age of 3 and 4 years, and gastro-enteritis in her first year. She was badly nourished, took only five feeds daily, and at the age of 9 months was put on cow's milk, which soon caused a diarrhœa which lasted several years. At two years broth was given in addition and a few weeks later she took what the others ate, *caf   au lait*, vegetable, stewed and boiled meat. Ulcerations due to swallowing caustics are not rare in children, and a foreign body, such as a coin, may produce the same result. Such ulcers may pass into a chronic form. The symptomatology is relatively rapid as in old people, so that in the majority of cases the affection is only recognised at the autopsy or the operating table. In characteristic cases, as in the authors', the affection begins by a phase of vague digestive troubles, perhaps subsequent to a gastro-enteritis and sometimes attributable to bad feeding. Then a dull

pain ensues, sometimes continuous, sometimes paroxysmal, rarely going through to the back; pressure in the epigastric region provokes the pain. Dyspeptic troubles consist in modifications of appetite characterised by periods of anorexia following fits of hunger, in vomiting, biliousness and constipation, more rarely diarrhoea. Acid regurgitations were well marked in one of the authors' cases. Hæmatemesis, so important from a diagnostic point of view, was wanting in two thirds of the cases terminating in death and verified by autopsy; it sometimes follows violent exertion and may be bright red or coffee-coloured. The general health is in relation to the intensity and frequency of the painful attacks. VINCENT DICKINSON.

Cultivation of the meningococcus from the eye conditions complicating epidemic cerebro-spinal meningitis (*'Montreal Med. Journ.,'* December, 1908).—McKee considers metastatic ophthalmus in epidemic cerebro-spinal meningitis not rare; many cases are mild and may be overlooked. It usually occurs in one eye only; the signs are hypopyon iritis with exudation into the papillary area, and quickly assumes the picture of pseudo-glioma. McKee describes a case in a child aged 7 years affecting the right eye, and from the anterior chamber pus was obtained from which grew the typical diplococcus; in only two previous cases was this done. The organism is easily confused with the gonococcus and the *Micrococcus catarrhalis*, and can only be distinguished by its staining reactions and cultural features. Conjunctival symptoms in epidemic cerebro-spinal meningitis may arise due to many different organisms, such as *Staphylococcus aureus*, *Bacillus influenzae*, diplobacillus, and *B. xerosis*, etc. These are easily recognised by morphology, but the Gram-negative ones, as gonococcus, *M. catarrhalis*, and meningococcus are only to be distinguished by their varied behaviour on culture mediums. J. PORTER PARKINSON.

Congenital hypertrophic stenosis of the pylorus (le rétrécissement congénital hypertrophique du pylore) (*'Gaz. des Hôp.,'* December 31, 1908, p. 1791).—Sarvonat gives a general review of the subject, chiefly characterised by an excellent bibliography. No new points are brought out. The author considers that spasm of the pylorus cannot account for all the cases. Medical treatment is recommended, at all events at first.

ERNEST JONES (Toronto).

Congenital muscular atonia (l'atonie musculaire congénitale) (*'Gaz. des Hôp.,'* February 5, 1909, p. 173).—Lévi-Sirugue gives a general review of Oppenheim's disease. The article contains no new facts, but constitutes a useful summary. The cardinal symptoms of hypotonia, paresis, or paralysis, and abolition of reflexes are described in detail, and the diagnosis discussed between the condition and acute anterior poliomyelitis, progressive muscular dystrophy, Parrot's syphilitic pseudo-paralysis, and paralyzes due to various cord lesions. Spiller found changes only in the muscles, and Baudouin throughout the lower motor neuron, especially in the anterior horn cells. Thirty-three per cent. of the patients die; the sexes are equally affected. Nothing is known concerning the ætiology.

ERNEST JONES (Toronto).

Two cases of Werlhof's disease in the same family (deux cas de maladie de Werlhof dans la même famille, a quinze jours d'intervalle, sous le même toit) (*'Gaz. des Hôp.,'* December 8, 1908, p. 1683).

—**Gabriel Ravarit.**—The first case was in a woman, aged 53 years, who was suddenly seized with great malaise and gastrorrhagia. On the next day diffuse purpura appeared. She died in four days. Twelve days later the granddaughter, aged 6 years, suffered similarly but to a milder degree. She recovered in ten days. The suggestion of infection is discussed.

ERNEST JONES (Toronto).

Histero-epileptic fits cured by circumcision (*La Med. de los Niños,* October, 1908).—**Torres** and **Cuadras** report the history of a child, aged 9 years, who had been always noted for violent outbursts of temper, headaches and attacks of sleepiness. The first fit occurred at the age of eight; he fell and was seized with convulsions lasting a quarter of an hour. These were repeated two or three times a day. Physical examination revealed no asymmetric or other defects; vision was normal in every respect. The later fits were preceded by auræ, headaches, optical or auditory illusions, and the convulsions involved the whole body. The child had one fit the second day after the operation, but there had been none since—which was some years ago. The cessation was not due to isolation from the family since the child was forty days in hospital before the operation, and during that time the attacks continued.

M. D. EDER.

Diabetes mellitus in a child aged 5 years, followed by pulmonary tuberculosis (*La Med. de los Niños,* October, 1908).—**Gonzalez** states that the child had a feeble constitution and was brought to him for increasing loss of weight with great thirst. There was considerable sugar present and the child was passing five litres of urine a day. Seven months later he found signs of tuberculosis in the lungs; the disease was very active and rapidly ended in death.

M. D. EDER.

Noma and neurosis of the upper jaw as sequel to measles; cure (*La Med. de los Niños,* October, 1908).—**Pares** reports this case in a boy, aged 4 years, who seemed a well-formed child. He was brought to the hospital for ulceration of the left upper jaw; there was some swelling of the retro-maxillary glands. The necrosed portions of bone were removed, the ulcer treated with the thermo-cautery, and the wound rapidly healed.

M. D. EDER.

A case of Henoch's purpura (*St. Petersburg med. Wochens.,* December 6, 1908).—**Zoepffel** referred to a case in a girl, aged 11 years. The family history was *nil*. The disease commenced with diarrhœa and anorexia, followed a few days later by swelling of the ankles and purpuric eruption. Vomiting and mæna ensued with colic, and other joints were attacked. Mucous membrane of mouth was normal, but there was nose bleeding. A left-sided pleurisy followed and rise of temperature. Blood examination showed diminished reds and poikilocytosis. Recovery was complete in a few months.

M. D. EDER.

Pathology.

Myopathic rickets (*Jahrb. f. Kinderheilk.,* Bd. 68, Heft 6).—**Bing** reported his histological researches in twelve cases of rickets, in which four showed decided pseudo-parietic hypotonic disturbance of the muscular system with well-marked Hagenbach's symptoms: in six others there was

decided weakness and sluggishness of the muscular system, while two showed no muscular phenomena. Corresponding to the degree of the affection clinically, there was found, in some of the marked cases, a considerable organic change in the muscle; in cases less marked clinically there was found no histological change, as a rule. The author concurred with Hedinger as to the striking resemblance which the much-altered muscular tissue bore to the muscular tissue of a rhabdomyoma, and places the foregoing process in the category of a retrograde metamorphosis. He considers it "a well-marked growth disturbance of the muscular system," a dystrophy, in which the starved tissues tend to a return to the primitive tissues. In conclusion the author discussed the question of the connection of myopathic rickets and congenital myotonia. He showed diagrams in illustration of his views.

J. E. BULLOCK

Polynucleosis in the cerebro-spinal fluid in three cases of tubercular meningitis (polynucléose rachidienne dans trois cas de méningite tuberculeuse) (*Arch. gén. de méd.*, Année LXXXVII, p. 584).—**Landowski and Claret** describe three such cases. They conclude that although lymphocytosis is a valuable indication of the tubercular nature of a meningitis, still the latter diagnosis should not be excluded because the cell picture is a polymorphonuclear one. It may happen that the leucocytosis in the early stage is of the polymorphonuclear variety, and later on of the lymphocytic.

ERNEST JONES (Toronto).

Anatomico-pathological and histological changes in the lymphatic glands in congenital syphilis (Alterazioni anatomico-patologiche ed istologiche dei gangli linfatici nella sifilide congenita) (*Giorn. internat. delle Scienze mediche*, Anno XXIX, p. 481).—**Vittorio Nista**, after reviewing the subject, describes at length the findings in two cases of congenital syphilis carefully examined. He concludes that here, as in adult cases, the glands show notable lesions. These may be gummatous, inflammatory, or degenerative with sclerosis. So in the adult the glandular system may be regarded as a barrier of defence of the organism. It is probable that the malignant cases in which degenerative and amyloid changes are found diffused, scattered, but hardly any specific changes, are explicable by the fact that the mother is in an active stage of the disease, and has directly transmitted to the infant not only the virus but also quantities of toxin.

ERNEST JONES (Toronto).

Therapeutics.

Electrotherapy in paralyzes of early life (*Arch. of Pediat.*, 1908, p. 912).—**T. A. Romeiser** states that in infantile spastic paralysis not much is to be expected from electricity alone, but that this treatment is of the greatest value in flaccid paralysis. In hospital practice Romeiser uses chiefly faradic and in private practice chiefly galvanic currents. Electrical treatment must not be started until all irritative phenomena of pain and tenderness have gone, in most cases not before the end of the first month. The duration of treatment varies. Greatest improvement is during the first four to six months. Romeiser thinks that electricity is an important adjunct in the therapy of poliomyelitis though secondary to the essential treatment, which is orthopædic and surgical in most cases.

J. D. ROLLESTON.

Fat incapacity in young infants (*'Pediatrics,'* 1908, p. 764).—A. S. Bleyer.—Attacks of vomiting, colic, and constipation, both in breast-fed and in hand-fed children may be due to fat incapacity. Bleyer has found that the indication for sodium citrate in such cases becomes relatively infrequent when the fats have been removed, and that a high proteid diet is then well tolerated.

J. D. ROLLESTON.

Otology, Laryngology, and Rhinology.

Suppurative middle-ear disease with mastoid symptoms and infectious pseudo-rheumatism of naso-pharyngeal origin (*'Trans. of the French Otol. Soc.,'* 1908).—Louis Bar, of Nice, relates the very interesting case of a girl, aged 14 years, who left Siberia with right acute middle-ear suppuration. Passing through Moscow, the sudden cessation of discharge necessitated myringotomy, after which she proceeded to Nice. Shortly before the otitis the patient had an attack of articular rheumatism, without redness, but with swelling, chiefly affecting the knee. The patient was anæmic, and had suffered for several years with fœtid nasal crusts. Her nasal mucosa was sensibly atrophic and ozenatous, naso-pharyngeal mucous membrane red and inflamed, and she suffered from indigestion due to the continual swallowing of nasal mucus. When seen on January 19, 1906, she showed no trace of rheumatism. On January 24 her temperature rose to 100·4° F., the otorrhœa diminished, and pain and swelling appeared round the mastoid. She was worse next day, temperature 104° F., pulse-rate 125–140, with accentuated mastoid symptoms, and tenderness over the right iliac fossa. The question of opening the mastoid was considered, but Bar decided to wait—a delay justified by subsequent events. Next day a sudden and remarkable improvement took place, mastoid tenderness and swelling becoming markedly less and the fever ceasing. Some pupillary inequality and a little headache remained, but any other sign of meningitis was absent, and, save for the nasal condition, there was nothing to be found in the respiratory passages. On the 27th the mastoid symptoms had practically cleared up. From this time there appeared an infectious pseudo-rheumatism, with disconnected febrile attacks, manifested now in the costal cartilages, now in the vertebral spinous processes, now in the epiphyses of the long bones, now in the fingers and wrists. Usually one articulation was affected at a time, rarely several. The region was hot, red, painful, and exquisitely tender, the condition being fugitive. Finally, a systolic murmur was noted conducted towards the axilla. The patient was thus ill for two or three months, and when she left Nice she was not altogether free. Analysis of the nasal discharge showed absence of tubercle bacilli, but contained streptococci. Bar, in discussing this case, considers that the mastoid condition was independent of the middle-ear condition, and was a rheumatic inflammation of the subcutaneous cellular tissue, like that described by Trosier and Boosy, Chuffart, Brissaud, and Davaine under the title of "rheumatic œdema" and "ephemeral rheumatic nodes." He believes that the patient was chronically poisoned by her nasal condition, and, being the child of parents with a strongly marked rheumatic diathesis, the rheumatic attack was so induced. He points out also the possible connection with the "para-tuberculosis" of Poncet and Leriche, and concludes that the history of this arthritic attack is the history of a more or less latent tuberculosis.

MACLEOD YEARSLEY.

Surgery.

Observations on injuries of the neck of the femur in early life (*Med. Record,* January 2, 1909).—**Whitman** states that it is generally assumed that all fractures of the hip in early life are due to separation of the epiphysis. Thus of eighty-four cases collected from the literature by Hoffa eighty were diagnosed as epiphysal fractures, and four reported by the author as fractures of the neck. During the first decade of life at least separation of the epiphysis is uncommon, as the part is protected by a firm covering of cartilage in addition to periosteal tissue, in adolescence, on the other hand, the junction between the head and neck becoming relatively weak. The differential diagnosis between the two conditions is important as regards treatment. An injury to the hip in a healthy individual, whether a child or adolescent, which presents the physical signs of fracture is far more likely to be a fracture of the neck than a separation of the epiphysis. If, however, the patient is an adolescent of the weak, rapidly growing, or over-weighted type, if the symptoms are produced by a comparatively slight injury, and if the disability is not complete, but slowly progressive, the probability is that an epiphysal fracture has occurred. If the separation is immediate and complete the injury is generally more severe, and the disability is proportionately greater. The results of untreated cases of fracture of the neck are distortion and apparent shortening of the limb, with comparatively free movement in directions not opposed by the deformity, the limitation of movement being especially the loss of abduction due to coxa vara. In injury to the epiphysis there is, in addition, great limitation of movement, or partial ankylosis with a certain amount of shortening due to loss of growth. In a case of recent fracture of the neck traction should be applied, and the limb be fixed in a position of complete abduction in order to reduce the deformity. If union has taken place, a wedge of bone should be removed from the base of the great trochanter to restore the angle of the neck and the consequent range of abduction. In rare cases separation of the epiphysis may be complete, so that the fragments may be manipulated into place, but usually the fragments are firmly adherent and reposition is not possible without operation. In such cases the anterior surface of the joint is exposed through a straight incision in the line of the neck, and the capsule is opened. It is then often necessary to remove a thin section of bone to allow of the insertion of a chisel with which to prise the fragments apart for replacement by abduction and inward rotation of the shaft. In cases of united fracture direct operation is required for the purpose of uniting the fragments.

T. R. WHIPHAM.

Contraction of the second phalanx (*Med. Press,* March 10, 1909).—**Lotheissen** showed at the Gesellschaft der Aertze of Vienna a patient on whom he had operated for contraction of both little fingers, which became stiff without any apparent cause about the eleventh year of age. He first made an N-shaped incision, dividing the skin over the interossei and lumbricales, forming two triangular flaps. As he then found that the finger could not be straightened he resolved to divide both angles of the aponeurosis, which in this case was much wider but shorter than the normal, and thus relieved the contraction. He considered that the condition was similar to Dupuytren's contraction of the palmar fascia, which appears to originate in a chronic plastic inflammation. The patient after the operation was able

to move his fingers freely both in extension and flexion. Klein thought that many of these contractions were hereditary, like retinitis pigmentosa, which had always a family history. Tandler remarked that these cases of contraction of the little fingers were not uncommon if the statistics of the post-mortem room are to be believed. Schlesinger said that he had seen contractions in the little fingers for three generations in one family. As a rule there was an abnormal shortening of the fingers and a shrinking of the phalanges.

T. R. WHIPHAM.

Primary tumours of the adrenal gland in children (*Amer. Journ. of the Med. Sciences*, June, 1908, vol. cxxxv, p. 871).—**Tileston** and **Wolbach** give a careful and detailed description of the case of a male infant, aged 16 months, who had sarcomatous disease in the adrenal gland and cranium, with exophthalmos. The subject is generally discussed after a full review of the literature. Cases of adrenal tumours in children fall into four clinical types: (1) Those with metastases to the skull (Hutchinson's type); (2) those of simultaneous sarcoma of the liver and adrenal; (3) those associated with precocious maturity; (4) other cases. The tumours are almost invariably sarcomas. Suspicion of the malady should always be aroused in cases of orbital tumours in children; cases of chloroma can be excluded by examination of the blood, and myeloma, which is exceedingly rare in children, by examination of the urine for Bence-Jones proteid.

ERNEST JONES (Toronto).

Nerve anastomosis in infantile paralysis (*Med. Record*, July 11, 1908, p. 54).—**Karl Osterhaus** describes the different methods of nerve anastomosis in vogue. He reports the case of a boy, aged 10 years, who at the age of six suffered from acute poliomyelitis which left a right talipes equino-varus. A crossed transplantation between the two popliteal nerves was made, and the tendo Achillis and tibialis anticus tendon divided. The result was encouraging.

ERNEST JONES (Toronto).

Herniotomy in infants (*Arch. of Pediat.*, 1908, p. 925).—**A. P. C. Ashhurst** records two cases: (1) Male, aged 6 weeks, whose hernia had appeared the night before the operation; (2) male, aged 11 months, in whom a right inguinal hernia had existed since birth. Both recovered. Ashhurst has collected fifteen cases of herniotomy for strangulated inguinal hernia in infants which have been reported since Telford's paper (*v. BRITISH JOURNAL OF CHILDREN'S DISEASES*, 1907, p. 515). J. D. ROLLESTON.

Congenital obstruction of urethra (*Arch. of Pediat.*, 1909, p. 58).—**T. Speese** records a case in a child born dead. Syphilis had been regarded as a possible cause of death owing to a history of repeated miscarriages. At the autopsy both kidneys were found to be enormously distended, normal tissue being completely absent. The ureters measured two centimetres each in diameter. The bladder was also distended and projected into the abdominal cavity. The cause of the obstruction was a valve-like fold situated in front of the verumontanum. The anterior urethra was normal, though owing to balanoposthitis the prepuce was cedematous.

J. D. ROLLESTON.

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ON CONGENITAL HEART AFFECTIONS, ESPECIALLY IN
RELATION TO THE DIAGNOSIS OF THE VARIOUS
MALFORMATIONS.

THE WIGHTMAN LECTURE FOR 1909.*

By GEORGE CARPENTER, M.D.,

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Société de Pédiatrie de Paris; Vice-President Royal Society of Medicine.*

(Continued from page 357.)

IN a Mongol,† aged 5 months, with a single auricle, and an interval between the auriculo-ventricular bicuspid valve and the top of the interventricular septum, there was a loud systolic murmur. This was best heard at a point midway between the apex-beat (sixth interspace outside the nipple-line) and the junction of the seventh costal cartilage with the sternum. The bruit could just be heard in the neck and also in the back faintly, the left side the louder of the two. There was no thrill. In Willcock's case‡ there was a loud systolic all over the front of the sternum and most intense between the third costal cartilages, and cyanosis was occasionally

* Delivered at the Section for the Study of Disease in Children of the Royal Society of Medicine, June the 24th, 1909.

† 'Reports of the Society for the Study of Disease in Children,' vol. viii, pp. 278 and 339.

‡ 'Path. Soc. Trans.,' 1887, vol. xxxviii, p. 96.

present. In John Thomson's case* the bruit was loudest at the fourth left space close to the sternum, and it was well heard over the left lung behind.

A diastolic bruit as well as a systolic has been described in "pure" cases of this defect.

Combining my clinical experiences of the "pure" defect with those cases of patent septum ventriculorum, where there has been atresia of the pulmonary artery and where the septal deficiency has been the sole murmur-producing spot, I have found the systolic bruit audible all over the chest, back and front. Sometimes the bruit is conducted into the great vessels of the neck, but sometimes not, and it may be heard there at one examination and disappear the next. In my experience, also, there is considerable variation in different cases as to the area of greatest intensity of the systolic bruit. Sometimes the bruit is most striking at the junction of the left sixth and seventh costal cartilages with the sternum, sometimes it is heard best at the fifth left interspace near the sternum, sometimes at the fourth, sometimes at the third, sometimes at the second, and sometimes midway between the apex-beat and the sternum, and but rarely at the apex. The seat of maximum audibility is also apt to change with respiration; thus a bruit which may be best heard at the fifth left interspace with inspiration may become loudest with expiration at the third left interspace. The bruit is apt to be affected by posture also; thus it may be heard loudest at the apex when the patient is erect, and at the base when lying down. In some the bruit is heard loudly all over the cardiac area below the level of the second interspace or third costal cartilages, but not above them. Another disturbing feature is that it is often exceedingly difficult to satisfy oneself as to the area of maximum audibility, for even while the examination is being conducted the murmur seems to vary in relation to this feature. When the bruit is audible over a large area of the chest it is always heard better over the left side than the right.

It is not therefore possible to lay down hard and fast rules as to the area of maximum intensity of the systolic bruit occasioned by patent septum ventriculorum. It is located on the left side of the sternum on the costal cartilages or interspaces, somewhere between the second left interspace and the junction of the seventh costal cartilage with the sternum, sometimes between the nipple and the left margin of the sternum, and rarely at the apex. The systolic thrill which occasionally accompanies it is not confined to any par-

* 'Edinburgh Hospital Reports,' vol. ii, p. 293.

ticular cardiac area; it is sometimes to be felt in the episternal notch, sometimes at the epigastrium. An important feature in the diagnosis of patent septum ventriculorum is the detection at the apex of a healthy first cardiac sound audible through the bruit and the tactile sensation accompanying it of the mitral valvular snap. The second pulmonary sound at the left base is accentuated if the pressure of the right ventricle be increased, and exceeding purity of this sound is important and suggestive.

The oldest patient that I have seen with perforate septum ventriculorum was a man who died suddenly at the age of 41 years while passing a turnstile at Chester races. He was very blue, the ears, eyes, and face being dusky. The fingers were dusky, and there was a slight suspicion of clubbing, but only a suspicion. Ophthalmoscopic examination of the eyes did not indicate venous stasis. The vessels were not tortuous. The veins were large, and only a trifle darker than the arteries, which were dark. The apex beat was in the fifth interspace, a quarter of an inch external to the nipple. There was no obvious extension of dulness to the right. The bruit was systolic and whistling, heard best midway between the nipple and the left sternal margin, and was not conducted far in any direction. The first and second sounds at the apex were normal, and the second pulmonary accentuated. His pulse was slow, of good volume, but with occasional intermissions.

As in defective interauricular septum, so in defective interventricular septum infarcts may be carried from the pulmonary valves through a defective interventricular septum to the arterial system. In a girl of mine, aged 6 years, whose left heart was healthy, the left middle cerebral artery was blocked in this way, and there were infarcts in the spleen and one kidney. In the child aged 8 years previously mentioned, there were vegetations on the right side of the patent septum.

Defects in the Interauricular Septum.

Defects in the interauricular septum.—A patent foramen ovale is so frequently found at autopsy that it can hardly be classed with other congenital abnormalities, and Fisher * states that slight patency of this foramen can be found in one quarter of adult post-mortems. A widely open foramen, however, must be looked upon as an anomaly. It occurs either alone uncommonly, or frequently in association with other interauricular septal defects. Defects in the lower part of the

* 'Reports of the Society for the Study of Disease in Children,' vol. ii, p. 263.

interauricular septum are rare, and are explained by failure of the septum primum to descend and unite with the endocardial cushion between the ventricles. An example of this deformity in an infant, aged 9 months, I showed to the Society last year.* The auricular septum was represented by a translucent membranous partition of semilunar outline hanging from its roof, attached back and front, and with the arc of the bow at the top, and the base of the bow hanging free and falling far short of the interventricular septum. There were associated cardiac anomalies. In a form that is rarer still the defect is situated above. An example of this defect in an infant, aged 6 months, I recently showed to the Section.† There was a round communication between the two chambers about $\frac{1}{4}$ in. in diameter. Behind, the foramen was bounded by a narrow translucent fibrous structure, the extreme posterior part of the defective septum. In front the margin of the rounded aperture was crescentic when viewed from either chamber, but whereas the crescent on the side of the left auricle appeared single, when seen from the side of the right auricle it was found to be double. This was due to the fact that the anterior part of the auricular septum was divided vertically into two parts, each of the divisions commencing with a crescent-shaped margin. A probe passed between the divisions traversed the septum for nearly $\frac{1}{4}$ in., and then appeared in the left auricle at the foramen ovale. The left division of the septum was thin and translucent, whereas that starting in the crescentic segment on the right side, which was $\frac{1}{5}$ in. further forwards, was thick and opaque. The semilunar valve and the foramen ovale were in the forepart of the partition, and although the foramen was not closed it was very efficiently guarded. The defects in this infant would appear to have involved both the septum primum and septum secundum, the divisions of which in the anterior part of the outer auricular wall were clearly indicated. The only other congenital abnormality found was a bifid apex to the heart. Rarer still the rudimentary interauricular septum may be found below, the upper portions being wanting, or, as in a case recorded by Peacock, there was a large, rounded aperture in front of the closed foramen ovale. Finally, the septum may be entirely wanting, as in a Mongol infant, aged 5 months, shown by me to the Society last year.‡ The

* 'Reports of the Society for the Study of Disease in Children,' vol. viii, pp. 231-237 (illustrated).

† 'Proc. Roy. Soc. Med.,' vol. ii, No. 2, p. 36, Section for the Study of Disease in Children.

‡ 'Reports of the Society for the Study of Disease in Children,' vol. viii, pp. 278 and 339 (illustrated).

associated defects were one large bicuspid valve between the common auricle and ventricles and the passage of the aorta over the right bronchus.

Open foramen ovale alone and along with other interauricular septal defects occurs in association with stenosis and atresia of the pulmonary artery, transposition of the great vessels and occlusion of the tricuspid orifice. Defects in the interauricular septum happen nearly as frequently as defects in the interventricular septum. Very occasionally they are the *sole* lesions, and very slightly exceed in number as solitary lesions the similar conditions found at the interventricular partition.

Patency of the foramen ovale and defects in the interauricular septum are often diagnosed and seldom discovered, and for the reason that they do not often give rise to characteristic bruits—indeed, murmurs are but seldom produced by these abnormalities. Holt once found a presystolic murmur localised at the right base, the only lesion found post-mortem being a patent foramen ovale. In a case recorded by Foster, quoted by Koplick,* there was cyanosis with a varying systolic and presystolic murmur at the sternal ends of the third and fourth cartilages. In the case that I have just related, which was a particularly favourable one for observation as the septal deficiency was the sole lesion, there was a systolic bruit heard best over the second left interspace and all over the front of the chest, better heard on the left side than on the right, and inaudible at the back and in the neck vessels. I am in doubt as to whether I timed this murmur correctly, and whether it might not really have been *presystolic* in time and not systolic. Those who have experienced the difficulty of accurately timing murmurs in the rapidly acting hearts of crying babies will appreciate the obstacles that confront one. Harsh systolic murmurs, however, have been described by other observers as well, but it is not at all clear how a bruit coinciding with the systole of the auricles could possibly be systolic. Frequently, as in my case just related, cyanosis is not a symptom, though cyanosis with paroxysmal increase may be a marked feature, as in the case I drew attention to when dealing with cyanosis.† Gross interauricular septal defects may be carried through life without causing any inconvenience or giving rise to any suspicion as to their presence.

Septal defects become of consequence if the auricles act unequally, and if there arises an overflow of blood into the right auricle, which

* 'Diseases of Infancy and Childhood,' Koplick, p. 641.

† *Loc. cit.*, "Morbus Cæruleus."

produces stasis in the systemic veins. A reversal of the flow into the left auricle may bring about the same conditions by throwing extra pressure on the pulmonary artery and so on the right auricle. A point of clinical interest about defects in the interauricular septum, as in the interventricular septum, is that septic and other particles may be carried from the venous system direct to the arteries of the brain and body or from the arteries direct to the lungs.

Stenosis and Atresia of the Pulmonary Region.

Stenosis of the pulmonary region is one of the most common of all the cardiac malformations, and in relation to atresia it occurs nearly three times as frequently. In the large majority of cases of stenosis the interventricular septum is patent. When this septum is closed the foramen ovale is often widely open. Both of these foetal passages may remain open. In rare instances both the foetal passages are closed.

In atresia the interventricular septum is more frequently found closed than in stenosis.

In stenosis the ductus arteriosus is usually closed, being found open, according to Mande Abbott's collection from the literature, in only about one tenth of the cases, but in atresia it is nearly always open. Of thirteen cases, six of stenosis and seven of atresia, I found the duct closed in all the cases of stenosis and patent in all the cases of atresia except one, and in that case the lungs were supplied by a large branch from a left innominate artery, and not by the ductus arteriosus as is usual.* If the ductus be closed in atresia the septum will be found defective, or the septum and foramen ovale will be open, and vary rarely the foramen ovale only. When there is a defective interventricular septum the aorta, which will then be found large, is frequently transposed to the right, and this irregularity occurs more often in atresia than in stenosis. The aorta may arise from both ventricles over the defective septum, or be thrust more to the right and take origin from the right ventricle only.

The stenosis may involve the whole pulmonary region, there being a hypoplasia of the pulmonary artery and its branches, as in a case I exhibited in 1904 in a child, aged $2\frac{1}{2}$ years. This condition was associated with other congenital cardiac abnormalities.†

* 'Congenital Affections of the Heart,' p. 25.

† "A Specimen of Congenital Morbus Cordis," 'Reports of the Society for the Study of Disease in Children,' vol. v, p. 48.

According to Keith there is associated conus stenosis in 90 per cent. of the cases. In one form, the common variety, the whole infundibulum may be involved and the endocardium thickened. In the other and less common deformity a so-called third ventricle or separate chamber is formed, being separated from the sinus by a perforated muscular partition. In the first variety the deformity, according to Keith, is due to arrest of development of the bulbus as a whole, and in the other the constriction which remains represents the ventricular origin of the bulbus or a persistence of the lower bulbar orifice.

In some cases the stenosis is valvular in character. It may consist of thickened nodular valve-cusps associated with a normal pulmonary artery and normal interventricular septum, as in John Thomson's case,* or the segments may be fused into a cone, or diaphragm, or a barrel-shaped membrane with a rounded or triangular perforation at the apex. When there are two valves only, the orifice will be found slit-like.

In Norman Moore's case,† a boy, aged 3 years, the perforation was no larger than a medium-sized pin. The ventricular septum and foramen ovale were defective. In a case of my own, in a boy, aged $3\frac{1}{2}$ years, the pulmonary valves were thickened and fused into a cone and the pulmonary artery was only the size of a crow-quill. *There were neither patent foramina nor open ductus arteriosus.* There were associated malpositions of the intestines. The cæcum was attached to the fissure for the gall-bladder by an omentum in which the gall-bladder was included. From this point the large intestine ran to the left iliac fossa and then across and behind the small intestine. The sigmoid flexure was in the right iliac fossa, and the rectum lay on the right side. The aortic valves were thick.

In a case reported by Crocker‡ in a boy, aged 2 years, the obstruction at the pulmonary orifice was due to a perforated membrane which showed no evidence of valvular origin. The pulmonary artery was very small and thin-walled. The interventricular septum was patent and there were other congenital cardiac anomalies.

In transposition of the great vessels the pulmonary valves have also been found fused into a cone. In the case of a boy, aged 8 years, reported by Howard Tooth,§ the aorta arose from the infun-

* 'Edinburgh Hospital Report,' vol. ii, p. 294.

† 'Path. Soc. Trans.,' 1885, vol. xxxvi, p. 176.

‡ *Ibid.*, 1879, vol. xxx, p. 275.

§ *Ibid.*, 1884, vol. xxxv, p. 127.

dibulum, and the pulmonary artery from the sinus of the right ventricle. The pulmonary artery was of fair size, and the valves were fused into a cone with a slit-like aperture. The interventricular septum was deficient at the base, and anteriorly to this foramen was a large opening in the septum across which lay obliquely a large fleshy column, dividing it into two smaller foramina. In Crocker's case* in a girl, aged 13 years, the aorta arose from the left ventricle, and just in front of it was a constricted pulmonary artery whose valves were united into a cone. The foramen ovale was patent and the septum ventriculorum incomplete. There were other anomalies.

Illustrating stenosis from congenital defect dissociated from endocarditis is Cantley's case† in a child aged 11 months. The aorta arose from the right ventricle and the pulmonary artery from the left. The orifice of the latter was stenosed owing to a valvular defect. The valve was bicuspid. There were patent septum ventriculorum and patent foramen ovale, and other cardiac irregularities.

In some cases stenosis has evidently originated later in intra-uterine life, after the closure of the septum ventriculorum as in Thomson's case. In the other and the more numerous variety the forms that are met with suggest a developmental origin and a secondary endocarditis infection implanted on a rudimentary pulmonary tract.

In developmental cases the pulmonary artery is usually thin-walled and vein-like. In the other variety the pulmonary artery may be thin-walled also, but it is often either dilated or normal. In stenosis hypertrophy and dilatation of the right auricle and ventricle are common, and if the aorta be deviated to the right these hypertrophies always arise, and this vessel will be found large and thick-walled. The combination of pulmonary stenosis, deviation of the aorta to the right and patent septum ventriculorum is the most usual of all congenital abnormalities.

In *atresia* the obliteration occurs at the conus, or the valve, or the pulmonary artery may be entirely absent as in Peacock and Reid's case.‡ In a case of my own§ in a boy, aged 19 months, there was no trace of a valve, but the artery was patent from the valve seat

* *Ibid.*, 1880, vol. xxxi, p. 92.

† 'Proc. Roy. Soc. Med.,' Section for the Study of Disease in Children, 1909, vol. ii, p. 162.

‡ 'Path. Soc. Trans.,' 1880, vol. xxxi, p. 91.

§ 'Congenital Affections of the Heart,' p. 83.

to the ductus arteriosus and about the size of a piece of whip-cord. The ductus was the size of the common carotid.

If the septum ventriculorum be closed the right ventricle dwarfs and the rest of the heart enlarges. With a patent septum ventriculorum the right side of the heart hypertrophies and dilates and the left side remains small.

Regarding the detection of right-sided hypertrophy of the heart in pulmonary stenosis and atresia a small amount of right-sided enlargement is rather apt to be overlooked if reliance be placed solely on the superficial area of cardiac dulness. Deep percussion should always be resorted to in addition, and it is well if possible to verify the result by X-ray examination. The lung on the right side of the heart covers a moderate enlargement of the right auricle and ventricle and so masks the signs.

Pulmonary stenosis and atresia supply the most typical illustration of morbus cœruleus, and of the two anomalies atresia affords the most pronounced examples of this condition of body.

The bruit of uncomplicated pulmonary stenosis is systolic in time, and is best heard over the second left interspace close to the sternum or on the third costal cartilage. It is usually conducted over the left front of the chest and crosses the sternum, being heard slightly to the right. It is carried up towards the left clavicle. It usually ends before the axillary fold. There appears to be some doubt as to whether the bruit can be heard in the back in uncomplicated cases. It certainly can—I have post-mortem evidence as to that. It can be heard all over the front of the chest and all over the back, the left side more than the right and also in the left axilla. It is not heard in the carotids.

Should pulmonary stenosis be associated with a patent septum ventriculorum as so frequently happens, a systolic bruit will probably be heard in the carotids. If that be heard the suggestion is that pulmonary stenosis is combined with this septal defect, as I believe I was the first to point out some years ago.* It is not necessary for the aorta to arise immediately over the septal defect to conduct a bruit into the neck vessels. Thus, in a girl, aged 15 months, whose pulmonary artery was guarded by fused, thickened bicuspid valves, with a channel which would admit a probe leading to a thin-walled artery which would allow the passage of a blow-pipe $\frac{3}{16}$ in. in diameter and, with the aorta arising from the left ventricle, the bruit was heard remarkably well in the neck vessels. The septal defect was situated under the aortic valves and admitted the tip of the index finger. In

* 'Congenital Affections of the Heart,' 1894, p. 70.

a child aged 19 months, whose pulmonary artery was absent and whose aorta arose over both ventricles, but more from the right side, the bruit produced at the septal defect was heard in the carotids. There can be no question that in the latter case the bruit was not that of a defective pulmonary track, but was manufactured at the septal defect and carried direct to the aorta. I could give several other illustrations of complicated septal defect with bruits in the carotids and subclavians, but those I have related must suffice.

Sometimes two murmurs of different timbre can be distinguished, one with its area of greatest intensity over the pulmonary area, and due to the pulmonary stenosis, the other lower down on the left side of the sternum over one or other of the interspaces there, or over the situations which have been described as likely cutaneous areas for the bruit of patent septum ventriculorum. While infrequently murmurs of different timbre indicate the combined lesions of inter-ventricular septal defect and stenosed pulmonary tract, it more often happens that the bruit heard is due to the associated septal defect and has not been produced by the narrowing of the pulmonary channel.

In stenosis the second pulmonary sound must in large measure depend upon the mobility, resiliency and size of the pulmonary valves. Under ordinary circumstances this sound may be weakened, but if the right ventricle be hypertrophied, or if the pulmonary artery be dilated or enforced by a large patent ductus arteriosus, accentuation of the second pulmonary sound is likely to occur. The second pulmonary sound should be wanting if there be atresia, but in this condition the aortic second sound is usually very loud and well conducted, and the omission may be missed. X-ray photography may assist in determining an enlarged pulmonary artery and a patent ductus arteriosus. The converse may also be seen by this means, a diminished cardiac shadow over the area of the pulmonary artery denoting its absence in atresia, or indicating hypoplasia of this vessel in stenosis.

A murmur which is apt to be overlooked and which occasionally occurs in pulmonary stenosis is a diastolic bruit. Four times I have met with this, viz. in a girl, aged $3\frac{1}{2}$ years; a boy, aged $3\frac{1}{2}$ years; a girl, aged 11 years; and an infant, aged 10 months. In all the children the *systolic* bruit was heard over a wide extent of the chest, and in three cases in the carotids and subclavians and in the infant also, but it was not of the same quality in this last case. In the child aged $3\frac{1}{2}$ years the systolic bruit was most intense at the second left interspace, in the girl aged 11 years over the fourth

left costal cartilage, in the boy over the left third costal cartilage, and in the infant over the third left interspace. In the three eldest children the right heart was enlarged. The diastolic bruit in all the cases was of the character of an aortic diastolic whiff, and in the two eldest was loudest at the second left interspace and conducted down the left side of the sternum to the epigastrium. It fell short of the left clavicle by half an inch. In the two eldest children the diastolic bruit was most distinct over the junction of the sixth and seventh costal cartilages with the sternum on the left. At the second left interspace in the second eldest child there was a double thrill, together with a systolic thrill in the carotids and sub-clavians, but the latter was not felt over the epigastrium or apex. In the eldest child the systolic thrill was felt all over the cardiac area. In all the cases the second sound over the aortic cartilage was natural, and in all the pulse tracings were normal. In the boy, who was dusky and had clubbed fingers and toes, an occasional diastolic whiff was heard over the left base. In the infant, who was cyanosed, the diastolic murmur was heard over the third left interspace, where there was a to-and-fro bruit, a harsh systolic and a whistling diastolic, the one rapidly following the other. The diastolic bruit was not heard outside the apex-beat and not to the right of the infant. There was a distinct diastolic thrill to the real left of the diastolic bruit. No second valvular sound was audible over the left base. In the three eldest children there was precordial bulging. There was no suspicion of ulcerative endocarditis in any of these children.

Cantley,* in 1901, showed to the Society for the Study of Disease in Children the heart from a girl, aged 15 years, who developed pulmonary regurgitation, secondary to pulmonary stenosis, complicated by acute endocarditis of the valves. A point about this case was that the regurgitant bruit was present for many months and while the patient was in good health. Cantley in his communication refers to an article by Newton Pitt in Allbutt's 'System of Medicine,' and points out that reference is there made to ninety-nine cases verified post mortem, of which more than half were caused by infectious endocarditis, and of these only two were under ten years of age.

The prospect of life varies in these cases according to the defect. In atresia with a closed septum the children die in infancy. If the septum be patent the child may live a few years in place of a few

* "A Case of Pulmonary Regurgitation," 'Reports of the Society for the Study of Disease in Children,' vol. ii, p. 45.

months. In stenosis with a closed septum middle age may be reached, but with a patent septum adult life is the limit.

About one third of the cases of pulmonary stenosis die of tuberculosis of the lungs. Another though much less likely complication is ulcerative endocarditis.

Ductus Arteriosus.

The average diameter of the *ductus arteriosus* post-mortem at birth is stated by Thérémín to be 4·8 mm., and according to Klotz* this measurement is no indication of its functional capacity during life, for he states, on experimental evidence, that the size of this vessel when in action is equal to the capacity of the pulmonary artery itself. The feature of the artery is its rich supply in muscle and comparative deficiency in elastic tissue. Owing to the changes in the circulation at birth, the induction of a gradually decreasing blood-pressure in the ductus and the contractibility of that vessel, obliteration of its channel normally takes place within a month. Contracture, according to Klotz, is most marked at either end; and wrinkling of the lining membrane probably heralds the process. It is some months, however, before the artery is transformed into the *ligamentum arteriosum*. In the event of atelectasis soon after birth the duct is apt to remain patent, but not necessarily so. As an explanation for patency in some instances it has been suggested that there is a congenital defect in the wall of the duct, an idea which has been created by the frequent discoveries of anomalies elsewhere in the body. In an infant under my care the aortic valves were bicuspid, and the child a Mongol. In another infant, aged 8 months, there was a patent septum ventriculorum. A series of cases by De la Camp† in six brothers and sisters in which the diagnosis of patent ductus arteriosus was made by physical signs and X rays tends to support the suggestion of congenital defect in the duct to account for patent ductus arteriosus in some cases.

Patency of the ductus arteriosus as an isolated lesion is rare, very few cases being recorded in the literature, but as an associate of other congenital abnormalities of the heart it is quite common. Thus, in the absence of, or a rudimentary condition of, the pulmonary artery, the pulmonary radicles in the lungs are mostly supplied by this vessel. In cases also of isthmus stenosis aortæ of the *infantile*

* 'Trans. Assoc. American Physicians,' 1907.

† 'Berl. klin. Woch.,' January the 19th, 1903.

type, which may be associated with transposition of the vessels, the descending aorta is frequently supplied by this vessel. It is sometimes patent in the *adult* type of isthmus stenosis, and it occurs sometimes in transposition of the vessels. While this duct may remain open with absent or rudimentary conditions of the pulmonary artery, it may be closed in cases of pulmonary stenosis, and not uncommonly is closed. Atelectasis is apt to keep the duct open by increasing the blood-pressure in the pulmonary artery and so in the duct, but not necessarily, because the duct is often found closed in infants, where collapse of the lungs is a feature.

The length of the duct at birth is quite trifling, being only some 15 mm., and, according to Gerhardt, in patent ductus arteriosus of long standing the duct is usually shorter and broader than at birth. The majority of the literature referring to patent ductus arteriosus concerns adult findings. A duct of half an inch long, reported by Walsham,* is one of the longest recorded. It usually does not exceed a couple of centimetres. Rarely the aorta and pulmonary artery communicate directly without any vascular connectant.

The patent duct may be cylindrical or conical, with the base of the cone on the aortic side, or globular. The lumen of the vessel in the cases that have come to autopsy has varied from a bristle to that of a finger. Hypertrophy and dilatation of the right ventricle and dilatation of the pulmonary artery commonly take place in chronic cases. In a girl aged 8 months under my care, not published before, the duct admitted a rod of 6 mm., and a patent septum ventriculorum under the aortic valves, which was its sole associate, admitted a rod of 5 mm. The right side of the heart was hypertrophied and dilated. In another infant, aged 3 months,† its length was about two centimetres, and it directly continued the thoracic aorta. The right side of the heart was dwarfed. Exceptionally the left ventricle is hypertrophied as well. Atheroma in the aorta or pulmonary artery in the vicinity of the patent duct are not uncommon, as also the vegetations of malignant endocarditis. Cyanosis, for the most part, is no symptom of patent ductus arteriosus. In my baby aged 8 months the lips were rather lilac-coloured when crying, but in the infant aged 3 months there was no cyanosis, nor was there blueness in my infant aged 9 months. In Simmons' infant,‡ as in mine, cyanosis only appeared on crying. In Bittorf's child

* 'Path. Soc. Trans.,' vol. xxviii, 1876, p. 43.

† 'Proc. Roy. Soc. Med.,' Section for the Study of Disease in Children, vol. ii, No. 6, p. 262.

‡ 'Intercolonial Medical Journal of Australasia,' February the 20th, 1906.

aged 11 years cyanosis was slight but constant. In Carmichael's* child, a girl, aged 3 years, a case of isthmus stenosis, there was cyanosis and polycythæmia, with clubbing. But here, in addition, the mitral valve was so constricted that there were only three minute orifices in it, each not more than $\frac{1}{32}$ in. diameter.

Attacks of dyspnœa, epistaxis, tachycardia, and angina have been recorded by various observers in association with this condition.

The characteristic rumbling murmur accompanying patent ductus has been verified by post-mortem examination on adults, but not, as far as I am aware, on children. This bruit has been likened to a train in a tunnel, and to the mixed sounds in the engine-room of a screw steamer, and it runs right through the cardiac cycle. Gibson† times the murmur as commencing soon after the systole and gradually shading off in the long pause. Combined systolic and diastolic bruits have been recorded by Drasche,‡ and a diastolic bruit by Fagge.§ Systolic bruits have been described by Murray,|| White,¶ Simmons,** and Bittorf. A bruit corresponding to that regarded as characteristic of patent ductus arteriosus occurs when an aortic aneurysm opens into the pulmonary artery or vena cava. Recently a similar harsh and almost continuous murmur has been described by Hobhouse,†† of Brighton, in a child, aged 7 years, in association with a communication between the aorta and the pulmonary artery. This had taken place secondarily to ulcerative endocarditis of the pulmonary valves.

In my case of an infant aged 8 months just related, the systolic bruit which was present was suggestive of a perforate septum ventriculorum origin, rather than one arising from the patent duct. There was, however, a systolic thrill to be felt occasionally at the left base, which might have been due to either defect. In a girl of mine, aged 9 months,‡‡ with verified patent ductus arteriosus there was a systolic bruit, loudest at the third left interspace near the sternum. It was audible all over the chest, back and front, and heard better on the left side than on the right, and was conducted into the carotids. There was no thrill.

* 'Edinburgh Hospital Reports,' vol. ii, p. 298.

† 'Edinburgh Medical Journal,' 1900; 'Med. Press and Circ.,' May the 30th, 1906.

‡ 'Berl. klin. Woch.,' 1898, p. 1195.

§ 'Guy's Hospital Reports,' 1898, p. 1195.

|| 'Path. Soc. Trans.,' 1888, vol. xxxix, p. 67. ¶ *Ibid.*, 1885, vol. xxxvi, p. 182.

** *Loc. cit.*

†† 'Reports of the Society for the Study of Disease in Children,' vol. viii, p. 337.

‡‡ *Ibid.*, vol. viii, p. 231, *et seq.*

In my infant, aged 3 months,* the bruit was systolic, and masked the other cardiac sounds. It was loudest at the third left interspace, and heard in the front and back of the chest, and in the axillæ better on the left side, and better up than down. It was conducted into the carotids, where it was heard loudly; there was no thrill.

The systolic bruit is heard loudest in the second or third left interspace close to the sternum. It may be heard only to a limited extent, as in White's case, some three inches' radius from its point of greatest intensity; or it may be carried all over the chest, back and front, and into the arteries of the neck, as in my verified cases. A thrill is by no means constant. When it occurs it is best felt in the second left interspace, and if the thrill be carried up to the left clavicle in the direction of the pulmonary artery, that is pathognomonic. A. E. Gibson showed, at the Edinburgh meeting of this Section, an excellent example of this feature in the case of a young woman, who also displayed a rumbling bruit, commencing with the systole and running right into an accentuated second pulmonary sound. A thrill may also be felt in the neck, over the arch of the aorta. The pulmonary second sound may be unaltered, but if the blood-pressure be raised in the pulmonary artery by hypertrophy of the right ventricle or by the contribution from the aorta, then an accentuated pulmonary second sound will be heard. A thrill may be felt in the second left interspace in ostial stenosis of the pulmonary artery or in patent septum ventriculorum, as well as in patent ductus arteriosus, so that a thrill in this situation cannot be considered to indicate any special lesion. If the X-ray picture suggests an enlargement of the pulmonary artery, that point is in favour of patent duct. In Arnheim's case† X rays showed an enlarged shadow of the pulmonary artery fitting on to the cardiac shadow cap-like. Hochsinger figures in Pfaundler and Schlossman‡ this cap-like shadow superimposed upon the heart. The internal mammary arteries are also enlarged in the picture, suggesting a collateral circulation, as was also probably the case in Arnheim's patient, both being indicative of coarctation of the aorta. In Bittorf's case, when viewed from the side, the shadow was the size of a walnut, and pulsed in unison with the aorta. In fact there is now accumulating X-ray and clinical evidence, by various observers, confirming the

* 'Proc. Roy. Soc. Med.,' Section for the Study of Disease in Children, vol. ii, p. 163.

† 'Berl. klin. Woch.,' July, 1903, p. 616.

‡ "Chapter on Diseases of the Circulatory System" in Pfaundler and Schlossman, p. 482 (Shaw and La Féra).

original observation of Gerhardt as to the presence in these cases of a narrow band of dulness of a finger's breadth or so to the left of the sternum, occupying the third to the second or first costal cartilages and corresponding interspaces. If the second pulmonary sound be loudly accentuated there will probably also be observed visible diastolic pulsation or rebound in the second left interspace at the time of the closure of the pulmonary valves.

Bruits and physical signs cannot be expected to occur in patent ducts of small calibre. In order that a bruit shall be produced it is necessary that there shall be a sufficient space within the walls of the duct and pulmonary artery, in which the conflicting blood-currents shall operate best to produce vibration and sound. There are now a fair number of cases in the literature where patent ductus arteriosus has been diagnosed but where the patients are still alive and where the diagnosis has not been verified. Among these is a case shown by Cecil Williams,* at the Bristol Provincial Meeting of the Society for the Study of Disease in Children. This child, when first seen by him, had a loud and prolonged murmur, of roaring character, continuous throughout the whole of the cardiac cycle, but loudest during systole. It was heard best in the second left interspace. The murmur, after two and a half years, had been replaced by a faint systolic bruit, and the conclusion of the exhibitor was that gradual occlusion of the ductus arteriosus had taken place.

I have narrated my combined clinical and pathological experiences of patent ductus arteriosus, and I will now add my clinical observations in relation to this matter in the shape of the following hitherto unpublished cases which have come under my notice.

Of the 100 cases previously referred to, in a boy, aged 5 years, a girl, aged 18 months, and a boy aged $2\frac{1}{2}$ years, the physical signs were in favour of patent ductus arteriosus, the murmur in each case being systolic. In a boy, aged 12 years (*vide* Fig. 1), under my care, there were presystolic and systolic bruits at the apex, together with a long, rumbling systolic bruit at the base. The morbus cordis had been known two years. The basic bruit was entirely distinct from the bruits at the apex in timbre, and also by reason of a considerable interval of inaudibility between them. The basic bruit was best heard at the second left interspace, and it was conducted up to the left clavicle and but slightly below the second interspace. It was conducted across the sternum slightly to the right and as shown in the photograph, and it was well marked within the area outlined by the broken line. It was heard in the

* 'Reports of the Society for the Study of Disease in Children,' vol. iv, p. 310.

carotids and subclavians better on the left side than the right, and it was audible behind at the root of the left lung. The bruit ran right up to the second pulmonary sound, which was ringing in character. There was an occasional systolic thrill carried up towards the left clavicle. At times its characteristic was that of a valvular snap sensation rather than a tremor, but it became distinctly

FIG. 1.



purring on expiration. The second left interspace pulsated visibly with the systole, but not with the diastole. Gerhard's line of dulness was two fingers' breadth in front of the second left interspace. A skiagram (*vide* Fig. 2) showed an enlargement of the pulmonary shadow to the extent of an inch and three quarters in the second left interspace corresponding to the fourth and fifth interspace behind. There was no extension of the cardiac dulness to the right. His mother and three other children were examined

for patent ductus arteriosus, but this was not present in them and they were free from heart lesion.

In a girl, aged 3 years (*vide* Fig. 3), there was a loud, rumbling systolic bruit running right up into the second pulmonary sound, which was accentuated. In addition the rumbling bruit was composed of a peculiar crackling sound like the stringing together of a set of fine pulmonary *râles*. The murmur was best heard in the second left interspace and was conducted in a variety of direc-

FIG. 2.



tions, perhaps a little better up towards the left clavicle than downwards. It was heard but little across the sternum, and did not extend beyond the cardiac area towards the left axilla. It was plainly audible in the carotids and subclavians, better in the left than the right, but it was not heard in the back. There was also a systolic thrill which was felt occasionally in the second left interspace and in the direction of the pulmonary artery to the clavicle. There was no suspicion of cyanosis. Gerhardt's band of dulness was present in the usual situation, a broad finger's breadth to the left of the sternal margin, the upper dotted line in the photograph

being its external limit. The right heart was not enlarged. The child had a mole on its left forearm. A skiagram (*vide* Fig. 4) showed a pronounced dome-shaped structure on the top of the heart opposite part of the first and the second interspaces and third rib in front and occupying the fourth and fifth interspaces behind. The aorta above it was of normal dimensions. The pulsation of this dome-

FIG. 3.



shaped shadow corresponding to the patent duct and enlarged pulmonary artery was synchronous with the cardiac systole. Both parents and two other children were also examined and their hearts were found to be normal.

My last case, a girl, aged 5 years, is of some interest owing to the disappearance of the bruit while under observation. When I first saw her in October, 1894, the systolic bruit, which was heard loudest in the second left interspace, was heard all over the cardiac

area and conducted to the left clavicle. It was audible in the neck vessels. The second pulmonary sound was accentuated. In March, 1895, once or twice I thought I could hear a systolic bruit at the left base, but this was very indefinite. In July, 1896, the basic bruit had completely disappeared, but when she was seen on this occasion she had developed an apical systolic bruit following a rheumatic attack.

Systolic bruits in my experience are the usual accompaniments of patent ductus arteriosus in children, and the rumbling bruit

FIG. 4.



occupying the systole and diastole in adults which is considered to be characteristic of that lesion is not common in them. Williams's case is the only one I have found a record of occurring in a child, and that eventually became systolic.

Tardy closure of the ductus arteriosus may well explain the disappearance of cardiac bruits in children who have been diagnosed as suffering from a congenital heart affection. Reviewing the morbid anatomy of the congenitally deformed heart, closure of this foetal channel appears to be about the only thing possible in the way of a cure open to these cases.

(To be continued.)

IRREDUCIBLE INTUSSUSCEPTION IN THE INFANT
TREATED BY ILEO-COLIC ANASTOMOSIS.

By HENRY RUTHERFURD, M.B., F.F.P.S.Glas.,
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for Sick Children.*

CASE.—Norah A—, aged 4 months, was admitted to the Royal Hospital for Sick Children, Glasgow, on March the 7th, 1908, at 1.15 a.m. She had been fed at the breast and was in good condition. The mother stated that on the first of the month the child was fretful, looked pale and vomited occasional mouthfuls, seemed in pain, clenching its hands and drawing up its legs. Next day it seemed well, was quiet and did not vomit, but at midnight began to scream, passed bloody mucus and began to vomit. Vomiting went on throughout March the 2nd and 3rd (being also the second and third days of illness); on the 4th there was some occasional sickness, but on the 5th the child seemed to be very well. On the 6th vomiting again began; at 4 p.m. blood and mucus was noticed on the napkin. On admission the child looked ill, was pale and restless, with sunken eyes. Temperature 99° F.; pulse wonderfully good, about 124. A tumour was easily felt in the abdomen lying across the epigastrium and left hypochondrium, more or less covered by the ribs and cartilages but admitting of being drawn down from under them. Nothing could be felt *per rectum*.

Without any attempts at reduction by indirect methods the abdomen was opened to the left of the umbilicus between 2 and 3 a.m. The intussusception seemed to be of the ileo-caecal form and its apex had passed beyond the splenic flexure. It was only partially reducible by manipulation; the peritonæum of the intussusciptiens having begun to crack, the attempt to reduce was given up, and ileo-colic anastomosis was done. The connection was made by a double row of sutures at a point in the transverse colon below the apex of the intussusceptum in its partially reduced condition.

For the first twenty-four hours the child was given merely spoonfuls of water and barley-water. On the morning of March the 8th it was put to the breast, and during the remainder of its stay in hospital was fed by the mother three times a day, her feeding being supplemented during the night mainly by barley-water.

On the day of operation the bowels moved once, on the following day three times, and regularly at about this rate till March the 13th, when there set in some diarrhœa, with green stools: no blood or

sloughy material was seen. The diarrhœa was got over by the 17th. The temperature on the day of operation did not exceed 99° F.; on the next day it rose to 100°; by the fifth day it was normal; at the onset of diarrhœa it rose to 101·8°.

The child was taken home about sixteen days after operation. It was shown to the Glasgow Medico-Chirurgical Society on April the 3rd. It has been seen by me on several occasions since, the last time having been in March, fully a year after the operation, when it was seen to be well grown, plump and in excellent condition.

Irreducible intussusception would seem to admit of treatment by three alternative methods:

- (1) The formation of an artificial anus.
- (2) Resection.
- (3) Exclusion by lateral anastomosis.

Of the first of these I have had no experience, and I do not know of any case in the infant at all events where it has been done with success and the continuity of the bowel re-established by a subsequent operation. In the vast majority of cases the opening will have to be made in the small intestine, and the danger of inanition cannot be left out of consideration, though perhaps it has been too much insisted upon. In cases coming late to operation where the bowel above the obstruction is loaded and distended and more or less paralysed, where every stitch-wound is likely to become a septic sinus, it seems reasonable to think that drainage of the bowel contents is what is wanted and that by the quickest method possible. It is not loss of the intestinal contents that is the impending danger, but retention of them and poisoning from intestinal absorption of them long before any gross extravasation of them can occur by ulceration or gangrene.

In making an artificial anus it would probably be the best procedure to select a loop low down and take it out to the extent of four or five inches through an opening in the flank, tie in a glass tube, and after assisting the adjacent coils to empty themselves, to close the wound of exploration, which is presumably in the middle line.

This, of course, is to be regarded as a temporary expedient. Supposing the child to have recovered, it will, I believe, be best to re-open the abdomen in the middle line and make such a lateral anastomosis as may be practicable between the ileum above the artificial anus and the colon below the intussusception. Such an anastomosis should be free; it is to be for life, and a large stoma will simplify the treatment of the artificial anus. There is no question

of restoring the continuity of the bowel at this point; the ends will simply be freed, cut short down to their intact surfaces, inverted and dropped into the abdomen.

Resection of the parts involved has in the infant been almost uniformly disastrous. The only exceptions known to me are (1) the case recorded by Clubbe, of Sidney, where after effecting reduction by direct manipulation of the intussusception he resected four inches of the bruised and torn ileum and did an end-to-end anastomosis by suture. This was a child, aged 11 months, the only one of nine resections that succeeded.

The other (2) was the case reported by Mr. F. W. Collinson, of Preston ('Lancet,' October the 17th, 1907). The patient was a girl, aged 3 months. The operation was done seventeen hours after the onset of symptoms. Seven inches of bowel were removed, including a small piece of ileum, the cæcum, and a portion of the ascending colon. The connection was made by a Mayo Robson's button and the button was passed on the fifth day.

I have done resection in the infant for this condition five times and all the cases have died. In two of the cases the method was what may be described as Maunsel's, though that surgeon had not in view resection for existing (pathological) intussusception. It consisted in (1) suturing the entering to the receiving layer, (2) opening the intussusciptions, (3) turning out and cutting away the intussusceptum, (4) doing a circular suture of the entering and returning layers, (5) closing the incision in the intussusciptions. In the normal bowel, in artificially produced invagination and in diagrams this looks both simple and secure, but the conditions differ from the diagrams. I have seen an entering layer stretched and macerated till it looked like a vein within a returning layer tumefied by œdema and ecchymosis beyond all relation to the contained tube to which an attempt was made to sew it. Possibly the treatment of this difficulty is to see that none of the entering bowel that has been drawn upon and squeezed is used, but that fresh bowel is drawn in and the actual intussusception increased. That may mean increased violence to vessels. At all events the portions of bowel involved are not suitable for use as might be supposed. These remarks have reference to acute intussusception in the infant. The chronic type is widely different as I gather from reports. I have no experience of it. As to acute intussusception in the adult I have only operated on one case; that was not diagnosed beforehand; it was irreducible, and was treated by lateral anastomosis and died. Some years ago I opened a case of acute obstruction in a middle-aged woman and found what I took

for an intussusception in the region of the cæcum. Entero-colic anastomosis relieved her for the time and she went out to return in six months with widely disseminated abdominal cancer.

Pozza ('*Clinica Chirurgica*,' 1901, No. 5; see '*Centralblatt für Chir.*' 1902, p. 421) recorded a successful case in a woman, aged 37 years. The symptoms were of six days' standing and consisted in abdominal pain, great distension, vomiting, latterly fæcal, and the passage of bloody mucus which appeared on the fourth day; no rise of temperature, no tenderness. Before connecting ileum and transverse colon by a Murphy's button the greatly distended colon was opened and its contents allowed to escape. After the passage of great quantities of fæcal matter, on the seventh day a slough of small intestine 60 cm. long came away. Pozza thought that cæcum and ascending colon were represented.

The patient was dismissed on the eighteenth day and did well subsequently. Pozza lays weight on the prompt relief to the distended bowel and to the rapidity of operating with the Murphy button.

In 1891, Senn, of Chicago, strongly recommended the making of an anastomosis, and practised the operation on animals in which he had previously produced intussusception. He quotes cases in which the same result had been obtained by a process of ulceration resulting in a fistula bimucosa. This can only be regarded as a fortuitous issue in abandoned cases. He says: "Intestinal anastomosis without resection of the intussusception is applicable only in cases of irreducible invagination in which the intussusceptum is only a few inches, at most a foot in length, and in which the external surface of the affected segment shows no indications of the existence of gangrene." On which it may be remarked that a foot of intussusceptum in the infant is a considerable length, and that the intussusciens is not the first part to undergo gangrene.

But Wilms ("Der Ileus," '*Deutsche Chirurgie*') is of opinion that such a procedure is only likely to be attended by a good result when combined with resection at the time or immediately afterwards. It was discussed at the Twenty-second German Surgical Congress, and while Braun recommended anastomosis in special cases, Von Eiselsberg pointed out the dangers (1) from blocking of the stoma by further advance of the intussusceptum, and (2) from inflammatory processes beginning in the tumour.

My colleague, Mr. R. H. Parry, operated with success in June, 1908, at the Royal Hospital for Sick Children. The child, a boy, was aged 6 months. The symptoms were of about forty-eight hours'

duration. The patient has since done well, and Mr. Parry has been unable to detect any surviving tumour. I have to thank him for permission to refer to the case.

I have used the method three times: twice in infants, with one success as detailed; once in an adult man in whom the diagnosis was only made on opening the abdomen after much handling of the parts: he died.

In 'St. Bartholomew's Hospital Reports,' vol. xliv, 1908, Dr. J. L. Maxwell reports four cases of chronic intussusception in the adult treated by lateral anastomosis. The patients were Chinese, all males. Three recovered, one died. The one who died was an elderly and feeble subject; the anastomosis in his case was done by means of a Murphy's button.

Post-mortem there was found no leakage of intestinal contents, but a very small area of necrotic tissue at the under-surface of the button.

In the other three cases which did well the anastomosis was by suture. They were aged 14, 19 and 29 years. Of two cases of excision in the hands of the same surgeon both died.

Dr. Maxwell is able to report that his cases were well and partaking of the ordinary rough feeding of the country (Formosa) three to eighteen months after operation. Mr. Parry's case is well twelve months and my own fifteen months after operation, and these facts seem to justify the opinion that the objections already quoted from Braun and Eiselsberg as to the occurrence of further progress of the intussusceptum and ulceration at the neck or gangrene of the intussusception are not based on any necessary result of the procedure. It is to be remembered that while my own case and Mr. Parry's were in the infant and acute, Dr. Maxwell's were in the adolescent and young adult and *chronic*. But taken together, and in view of the disastrous results of other methods, the cases must be held as presenting a claim for further use of lateral anastomosis to short-circuit the bowel and exclude the intussusception. What becomes of the intussusception we do not know; that it may even be reduced in some cases is possible. Seun says of his experimental cases that the tumour was found to undergo atrophy. Yet it has not in the successful cases recorded given trouble.

We may claim for it that (1) it immediately restores the continuity of the bowel and permits closure of the abdomen; (2) that it is simple and expeditious as compared with any operation of resection, and further, that it may be safer for the patient when complete reduction is only to be accomplished after prolonged manipulation, and where,

though the continuity of the bowel is, indeed, re-established, the parts involved are left bruised, infiltrated and more or less thrombosed and paralysed to transmit the intestinal contents propelled from above, in a condition, that is to say, which may be supposed to facilitate the passage of toxins and micro-organisms into the peritoneal cavity—a process which is attended by the sharp rise of temperature and toxic symptoms so often seen, and with which many operations, apparently successful, end in death within twenty-four to forty-eight hours.

HYPERPYREXIA OCCURRING IN CHILDHOOD.

By JAMES BURNET, M.D.

IF we may judge from the literature of the subject hyperpyrexia appears to be of very rare occurrence in childhood. The two following records of cases in which this was a marked phenomenon will therefore, I trust, prove of interest to members of this Society.

The first was that of a girl, aged 7 years, with a tuberculous family history, the brother having abdominal tuberculosis and both sisters having suffered from tuberculous adenitis. I saw the patient late one evening. The face was greatly flushed, the skin was burning and dry. She seemed only half conscious and swallowing was difficult. The temperature in the axilla was 107° F. There was considerable dyspnoea. Careful examination of chest and abdomen, of throat and ears, etc., failed to reveal the presence of any cause for the hyperpyrexia, and there were no evidences of any infection. Sponging of the chest was first tried, but the temperature only fell half a degree. The child was then wrapped in a blanket and the head held over the front of the bed while cold water was poured over the head from a jug for a couple of minutes. The temperature fell in half an hour to 105° F. Tepid sponging of the chest was resumed and presently the thermometer registered 103.4° F. The child was now less flushed, and was able to swallow a tablespoonful or two of milk diluted with water. Next morning at 9.30 a.m. the temperature was normal, and the child appeared perfectly well.

This case is unique in so far as no cause could ever be ascertained to account for this sudden and great rise of temperature. There was apparently no gastro-intestinal disorder, no pneumonia,

rheumatism, or other disease present. I suspected that there might ensue some infectious condition, but such was not the case. I have since met with a somewhat similar rise of temperature—this time to 106° F. in a highly nervous lady at the onset of what turned out to be a very sharp attack of influenza, but such was certainly not the case in the child whose attack I have just referred to.

My next case was that of a boy, aged $8\frac{1}{2}$ years, suffering from acute rheumatism. I had been in attendance for a fortnight. He was a very nervous child and easily excited. The heart was considerably dilated but no endo- or pericarditis was present. He had been treated by means of ten-grain doses of sodium salicylate and appeared to be doing well. The temperature had been normal for several days, when suddenly he became excited, crying out that there were "beasts in the bed," and nothing would pacify him. When I saw him some two hours later he was very flushed and excited, and, in fact, I had considerable difficulty in taking his temperature, this time in the groin. The thermometer registered 107.2° F. Cold sponges were held over his head for several minutes, and then the head was douched with cold water in the manner adopted in my former case. The temperature almost at once fell to 104° F. and the child was now more composed. I returned about three hours later and found that it had risen again to 105° F. I ordered sponges rung out of iced water to be applied to his head. Next morning I was told that the child had had a fairly good night, but that he was coughing. His temperature was 103.6° F. Examination revealed well-marked pericardial friction. This may have been present on the day previous, as the child's excited state at the time interfered with my examination. This case ran a favourable course throughout, and the patient made an excellent recovery.

In this instance I think we are warranted in assuming that the sudden rise of temperature was due to the development of pericarditis. At the same time I have seen a child who was having large doses of salicylates for a prolonged period become excited, although the temperature did not rise. I am fond of treating psoriasis by the administration of salicylates, and so also chorea, and it was in a child suffering from the latter complaint that I observed an almost maniacal manifestation, which certainly disappeared soon after salicylates were stopped and bromides substituted. There may be some connection here; at all events, it is worth while remembering that salicylates may cause nervous excitement in some children, and even hyperpyrexia, it may be.

Although we must admit that hyperpyrexia is rare in early life,

still I think we are wrong in assuming that it must be less common in the child than it is in the adult. At all events there is evidence to prove that cases do occur, even in the course of rheumatism, although this has been doubted by some writers. It would, indeed, be interesting if our Society were to collect from all the available literature the recorded cases of hyperpyrexia occurring in childhood, and publish the results of their investigations. Meantime, though I need not further refer to the literature of the subject, which must be thoroughly familiar to you all, I cannot but mention the valuable contribution which Dr. George Carpenter has made to it. He has reported three cases of acute nephritis associated with hyperpyrexia and one of chorea.

It appears that renal affections in children are particularly liable to be associated with high temperatures. In pyelitis, for example, we often meet with a temperature of 104° F. and over. Influenza is another disease in which I have occasionally met with a temperature of considerably over 104° F., and it is conceivable that here also hyperpyrexia might occur. Severe vaso-motor disturbances or hysterical fever might also account for it. I have also observed that writers on cerebro-spinal meningitis frequently refer to abnormally high temperatures as occurring in their patients. In pneumonia associated with cerebral symptoms and in enteric fever temperatures of 105° and 106° F. have been placed on record. Beyond this, however, I regret that I have no further personal experiences or suggestions to offer regarding the kind of case in which hyperpyrexia may be expected to occur.

The treatment, after all, is the most important point. Antipyretics are valueless and even dangerous. I am not quite certain as to the safety of applying an ice-bag over the chest in such cases. It may cause a good deal of shock and even collapse. When the skin is dry I think it is best to try tepid sponging in the first instance. If this has no effect then cold should be applied to the head, either by means of a sponge or an ice-bag (if the case is in hospital). Should these measures fail then I am strongly in favour of cold douching of the head and neck. For this purpose the patient is wrapped in a blanket and the head held over a basin or bath. A jug of cold water is then repeatedly emptied over his head and neck. So far as I can discover no untoward effects are likely to follow such a procedure.

One has carefully to keep in mind that children often bear cold badly, and that the application of ice to the chest may induce pneumonia in very young and feeble subjects. Such a risk is altogether

put out of the question if we substitute cold douching of the head and neck in the manner suggested.

Had time permitted I should have liked to refer to the interesting question of the actual cause of the hyperpyrexia in such cases. I am inclined to the view that there is a toxin present which is operating upon the heat-regulating mechanism and putting it out of equilibrium. We cannot at present do more than theorise as to the causation of this condition, and probably one theory is as good as another. I offer you this one for want of a better. I think hyperpyrexia in childhood deserves more attention than it has hitherto received, and I trust that this Society will be encouraged to investigate it still further.

THE DIFFERENCES BETWEEN THE SEXES IN THE DEVELOPMENT OF SPEECH.*

By ERNEST JONES, M.D., M.R.C.P.Lond.,

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It is universally recognised by those who have worked at the subject that the articulatory capacity develops in girls earlier and better than in boys. No proof, therefore, need here be quoted of this statement, which I have thoroughly confirmed by my own investigations. Up to the present no satisfactory explanation has been given of the fact, most writers confining themselves to the remark that girls are in general more adept and skilful in their movements than boys. This popular opinion has not been established by exact psychological investigations, so that it cannot be accepted as a satisfactory explanation of the greater lingual dexterity of girls. Further, it is certain that girls' speech surpasses that of boys in other respects than in mere muscular dexterity, indicating that some more recondite factor must be at work. Girls show, for instance, a much smaller tendency than boys to suffer from defects in fluency, particularly stammering (*Stottern*), which are now known to originate in complex psychical causes.

It has seemed to me possible that a clue to the problem might be obtained by making a detailed study of the precise respects in which the articulatory capacity of girls *most* surpasses that of boys. This

* Read before the International Congress of Psychology, Geneva, August the 6th, 1909.

is best done by determining the frequency of the various articulatory defects presented by average children. So far as I can find out from the literature, previous studies of this kind have all suffered from one of the following fallacies. Either they have been based on the study of too few cases, as in the speech clinics of Gutzmann, Neumann, Oltuszewski and others, or else when the frequency of the various defects in large numbers of children has been recorded, as by Mehnert,* Rouma,† Sarbo‡ and others, the observations have been made by untrained school teachers. Observations made in this matter by school teachers are of hardly any scientific value, especially when they are made by a number of different individuals, of different sexes, whose standard of comparison possesses no uniformity.

The present paper is based on the examination of 450 normal school children, and as the observations were all made personally it was possible to employ a uniform standard. Fifty children from each school year were examined, the sexes being equally represented. The details of the method employed and the results obtained have been elsewhere recorded,§ so that I need here quote only a few of the most important conclusions. The inquiry was limited to the consonantal sounds; 227 of these were tested in every case, and marks allotted according to a conventional notation.

One hundred and thirty-two of the sounds tested were better enunciated by the girls, 63 by the boys. We shall first consider the respects in which the girls most excelled, and then those in which the boys did. The former may be divided into two groups: (1) *linguo-dentals*, and (2) *sibilants*; the superiority of the girls was most pronounced in the first of these groups. (1) There are in English two *linguo-dentals*—voiceless and voiced *th*. The girls excelled with nineteen of the sounds containing a *linguo-dental*, the boys with only one. The superiority of the girls was often very marked, the number of defects being in one instance five times as great with the boys as with the girls. (2) Of the sounds containing one of the four *sibilants*, *s*, *z*, *sh*, *zh*, the girls excelled with 65, the boys with only 4. The boys replaced the *s* sibilant by a peculiar lateral sound (*oral sigmatismus*) in 140 instances, the girls in only 3; they replaced *sibilants* in general by it in 223 instances, the girls in only 13.

The relative capacity of the girls was least developed in the case

* Mehnert, 'Über Sprachstörungen,' 1904, S. 18.

† Rouma, 'Internat. Arch. f. Schulhygiene,' Bd. ii, S. 165.

‡ Sarbo, 'Monatsschr. f. Sprachheilk.,' Bd. xi, S. 65.

§ Ernest Jones, 'Internat. Arch. f. Schulhygiene,' Bd. iv, S. 186, and Bd. v, S. 137.

of the posterior linguo-palatals, and was here actually inferior to that of the boys. Of the sounds containing one of the three posterior linguo-palatals, *k*, *g*, *ng*, the girls excelled with 20, while the boys excelled with 21. The greatest difference between the sexes here was found with *ng*, where nearly twice as many defects occurred with the girls as with the boys. Next to this the respect in which the boys most excelled was with explosive linguo-palatals combined with liquids, particularly the sounds *dn*, *kn*, *gl*.

If we now survey these results we note that the sounds in respect to which the girls excelled differ from those in respect to which the boys excelled in one important matter, namely, in that they are sounds more easily taught to deaf children. They are therefore sounds which a child can learn to imitate not only by hearing, but also by the process of lip-reading. The inference thus seems plausible that the development of the articulatory capacity in girls may proceed by the aid of unconscious lip-reading to a greater extent than in boys.

With the children investigated a fairly close correspondence was found* in each sex between the degree of articulatory development and the amount present of nasal obstruction, and, therefore, presumably of deafness. Deafness occurs to about the same extent in the two sexes, so that the effectiveness of it in retarding articulatory development is greater with boys than with girls. This one would attribute to the fact of hearing being with boys the almost exclusive channel of education of the articulatory capacity. With girls, on the other hand, the effect of partial deafness is not so serious, because they can make use of the other educative channel (vision) to a greater extent than can boys.

If this hypothesis is substantiated by more extended investigations then it will become necessary to proceed a step further and inquire into the reason why lip-reading should play a more important part in the case of girls than of boys. There is no corresponding difference in the visual acuity of the two sexes, so that some influence must be at work allowing girls to profit to an unusual extent from their visual perceptions *in the particular respect in question*. In other words, for some reason girls must be able in intercourse with their elders to learn more from the faces of their audience than do boys, probably because they watch them more calmly and with less embarrassment. This is, I think, in accord with every-day observation, for it will be generally conceded that, before the age of mental

* Fifth Report to the Medical Officer, London County Council Education Department, 1908. To be published in detail later.

puberty—that is, before nine or ten—boys on the whole more often show awkwardness, abashment, and shyness in the presence of their elders than do girls. This may well be due to the more frequent and intense feeling of shame, or even guilt, that boys experience as a consequence of the nature of their early sexual emotions.

THE EXISTENCE AND RESULTS OF TREATMENT OF PULMONARY TUBERCULOSIS IN CHILDREN OF SCHOOL AGE.*

By E. G. HAMILTON WILLIAMS, M.D., D.P.H.

THERE seems to be a wide-spread belief that pulmonary tuberculosis is exceedingly rare in children. A less common view appears to be that children do suffer from it, but the disease in them is usually of such an acute and rapidly fatal nature that one does not see children affected by it in schools, *i. e.* that soon after onset the child is so ill that school attendance is out of the question.

With regard to the latter view, I may say at once that I believe it to be partially true of children under five years, and I think that much of the conflicting evidence on the subject we are discussing is due to the fact that, when the word "children" is used, many men at once think of little children, from birth to five years. For example, in Dr. Walter Carr's paper on post-mortem examinations of "children" dying of tuberculosis, he states that 202 out of 330 were under two years of age. I have been struck by the excess of young children (under three years) admitted at the childrens' hospitals, from which much of the clinical material hitherto at our disposal has been drawn, and from reports of which many of our theories have been formed. Now we have in the elementary schools fresh clinical material to consider, and we must be chary of applying to it the theories we have deduced from the consideration of material of a different kind. I believe that the frequency of pulmonary tuberculosis increases, year by year, as the child approaches puberty—as the conditions gradually change from those of childhood to those of adult life. Later on I shall offer you definite evidence on this point.

I will first allude briefly to my own experience and then will give the history of certain children's sanatoria.

* Read before the School Medical Officers' Association, in London, on April the 13th, 1909.

A few of the cases I have diagnosed have had the diagnosis confirmed by being admitted to the sanatorium at Knightwick, in our county. (This sanatorium has no beds for children, but has, none the less, accepted children in a few cases.)

One of these children happens to live near me, and I frequently see him. Unfortunately, his home is of the poorest description. He returned from Knightwick looking an absolutely different boy, but he has now lapsed, and has developed hæmoptysis; but, nevertheless, I see him constantly out and about. To my knowledge he has had the disease three years, and he now looks no more ill than he did three years ago. He is now over fourteen years and goes to work. Several other cases have been in the sanatorium, and in each case the duration of the illness has now extended over some three years or more. They have not been rapidly fatal.

I have mentioned these particular cases because in them my diagnosis has been confirmed by the selecting committee and by the sanatorium doctor. But I have had the same experience with other school-children and my private patients. Children have been under my care for years suffering from phthisis, and unless the home circumstances are bad I have not found there is much danger of a fatal termination. I consider children more resistant to pulmonary tuberculosis than adults. And by the word "children" must be understood those from five to fourteen years of age. There appears, however, to be a special tendency, especially in the earlier years, to death from tubercular meningitis, but the pulmonary disease is rarely lethal.

I had no idea till very recently that the existence of phthisis in a more or less chronic form among children was receiving recognition by the opening of sanatoria for them. Until recently, sanatoria were not, I believe, available in England for persons under sixteen years of age. Since 1906 two sanatoria for children have been opened; in addition, since 1904 the Metropolitan Asylums Board has had a home specially devoted to pulmonary tuberculosis among children under its care. There is also a sanatorium at Blencathra, in Cumberland, where about 12 per cent. of the admissions have been children.

Thus both the existence of pulmonary tuberculosis in children, and its amenability to treatment, are receiving recognition in widely different parts of England. And I am informed that there is no difficulty in finding cases; the requests for admission far exceed the accommodation.

I recently visited the Millfield Home. This home is near

Worthing, and was opened in 1904 for the treatment of cases of phthisis. Dr. Cecil Last is the medical officer to the home, and was most kind. He showed me cases and gave me figures which are very interesting. From Dr. Last's reports in the 'Annual Reports of the Metropolitan Asylums Board' I find that the number of children admitted during the years 1904-07 was 284. To these must be added the number admitted since then.

These children include every variety of pulmonary tuberculosis, from early to late.

On going through the records, Dr. Last picked out no fewer than thirty-two cases which were sent to him with cavities already formed in their lungs.

Of these thirty-two children, three have died, one is still in the home, and the rest have been discharged. After deducting those three who have died, and those who were over fourteen on admission, I get a list of twenty-five children whose ages vary from three upwards, and whose average age is just over nine years. These children stayed in the home, taking an average, twenty months each. One was in forty-four months, and several over thirty months. These children, while at the home, were up and about, playing with the others, and attending school. No doubt they were at times in bed with acute exacerbations, temperatures, etc., but as a rule they were in fair health.

Thus, it is evident that in spite of advanced pulmonary tuberculosis these children were, most of them, living pretty happily for some twenty months at Millfield. Many of them were discharged on the ground that they were not likely to receive permanent benefit, as the disease was too advanced. And in spite of this, the majority did not look ill. In fact I remarked to Dr. Last that if one had to rely on merely picking these children out of school and not on systematic examination, one would miss the larger number, and Dr. Last agreed. In short I submit that these cases support the view that pulmonary tuberculosis is very frequently a chronic process in children just as in adults, and that it is not necessarily either acute or rapidly fatal.

To quote Dr. Last's own words from his report for 1914: "Sixty-two cases were admitted and eight discharged, leaving fifty-four children under treatment. Some of these are advance cases, but the progress they are making is very satisfactory and their physique, considering the severity of the disease, remarkable. The results that are obtained in other cases are most encouraging; the gain in weight is obvious, and their general appearance of health,

even after a short stay, is a striking contrast to their appearance on admission.

"The cases that have reached us are most instructive, and illustrate the fact that children in early stages of consumption, if placed among suitable surroundings, have great recuperative power, a complete restoration to health being confidently expected in a great number."

Another sanatorium for children, only, exists at Holt, in Norfolk, and I am indebted to Dr. J. B. Gillam, the medical officer, for the following facts: "Of sixty-five cases, thirty were admitted 'late,' and sixteen were admitted when the disease had been in progress for a year or more without making much headway, and so, from a clinical point of view, might still be classed as early. Nineteen cases were admitted early. In the majority of the cases the diagnosis was evidently made some time after the disease had started. This I gather from the reports of doctors signing admission forms. In reply to the question, 'Give duration of disease,' a big '?' is the common reply. The question of diagnosis is a most difficult one. If one is to wait for proof by finding the tubercle bacillus in the sputum, one may wait in many cases till the death of the child. . . . Hardly one in twenty of my children expectorates. I maintain that the clinical symptoms are sufficient for diagnosis."

This is the view held by Sir Clifford Allbutt, who considers that a case that is not diagnosed till physical signs are present is a case bungled.

In addition to Dr. Gillam's letter, I have also his printed reports on the sanatorium for the years 1906-07 and 1907-08. They are especially interesting because the cases are, where possible, followed up and reported on again in the following year.

The cases are divided into early, moderately advanced, and advanced cases.

Of "early" cases there were six in the first year and they were all discharged "apparently cured." These six children are reported on the following year. One was lost trace of, four remained well, and one returned to the sanatorium. This last case is an interesting one, and is reported as follows: *First year*, "K. H—, girl, aged 8 years, remained twenty-six weeks, gained 10 lb., went away apparently cured." *Second year*: K. H— re-admitted. This child went home in January, 1907, in excellent condition, to live in a London basement. In June, 1907, she was re-admitted with a large cavity in one lung and the disease rapidly spreading. She remained eleven months, gained 10½ lb.; the cavity dried up and

she was sent away improved very much. She is to go to a country home."

This case was under observation, therefore, with an interval of six months, from July, 1906, to May, 1908, a period of twenty-two months—certainly a chronic case, though with considerable disease.

Of the cases in Class II, that is, more advanced cases, the following are interesting.

"V. J—, girl, aged 9 years, remained thirty-eight weeks, gained 11 lb. Although considered a doubtfully hopeful case, as both lungs were affected, did exceedingly well, and returned home with disease apparently arrested."

She is reported on a year later: "V. J— has slight cough, otherwise is fairly well; looks, eats, and sleeps well, and is growing very tall. Lives in country."

The next case is somewhat similar. "L. G—, girl, aged 4 years, remained twenty-five weeks, gained 9 lb. Showed improvement, but the disease was still persistent."

A year later the report is: "Keeps well and is able to attend school regularly."

Then comes Class III, advanced cases:

"E. H—, aged 12 years, remained twenty-five weeks, gained $8\frac{1}{2}$ lb. Although improved in general health, was unable to make any headway against the disease, which remained about the same as on admission."

A year later the report is: "Has rather lost ground since her return from Holt."

But, I would observe, even this case remained without much change for a year and a half.

The above children are not cases picked out as being especially resistant to the disease, but are fair average samples of children with phthisis. It will be seen that the fatal cases are proportionately very few, and that by far the majority are what may be termed "chronic" cases.

We may deduce the same conclusion from the report of Dr. Allinson on the Children's Sanatorium at Stannington, Northumberland. The sanatorium was only opened in February, 1908, and he reports on forty-eight cases. Every kind of case was accepted—good, bad, or desperate—and yet he writes as follows: "All of the forty-eight patients hitherto received have done well, except four. Some of our cases were in the last stages of cavity, fever, and emaciation—one from a workhouse with cavities in both lungs making striking progress. From a limited number one cannot draw

conclusions, but I venture to think the treatment of tuberculosis of the lung in children more hopeful than that of adults."

The results of treatment are much the same at Blencathra. Dr. Goodchild, the medical superintendent of the sanatorium, reports as follows: "The total number of children admitted amounts to 12 per cent. of the total admissions of the year. It is during childhood that infection occurs in most cases. With regard to the proportion of children of school age who are affected with tuberculosis much difference of opinion still exists; this is due largely to the paucity of data up to the present, but there seems to be a gradually increasing disposition to place the proportion much higher than was at one time held to be true. Of the 115 patients under treatment during the year (1908), fourteen were children of school age, and many others were seen by the Superintendent, but accommodation could not be provided for them. Most of the children have been going to school, but a few were diagnosed as tubercular on admission to Carlisle Infirmary for other complaints; results of treatment have in most cases been very satisfactory—a better average, class for class, than with adults."

In regard to Blencathra, the complaint is the same as expressed by Dr. Bulstrode in his exhaustive report for the Local Government Board on sanatoria in general—that the cases are not sent early. Dr. Goodchild speaks of the very low percentage of patients presented for admission in the early stages. In 1907, 9·8 per cent. were classed as early, and in 1908 only 4·9 were early. Yet all the others must have been early at some time. In future we will hope that the early stages will be diagnosed by the school doctor.

The evidence of these four sanatoria for children with their 500 odd children shows clearly that children respond extremely well to treatment, and that with it, even in advanced cases, the disease is often arrested. They respond even better than adults, or, in other words, the disease is of a sufficiently chronic nature to allow the time for the necessary processes of repair. From the lay point of view the children would not be considered ill. They are in such a condition that, if at home, they would be attending school, and very often do not even to the medical eye present the appearance of being ill. Many of them look in far better health than other children of the same class without disease, but who happen to live in unfavourable circumstances.

But we know from post-mortem records among adults that many people have had pulmonary tuberculosis and have recovered from it without any special treatment. They resist the disease successfully.

But under treatment children resist the disease better than adults. Is it not also probable that without treatment they resist it at least as well as adults? Or, to express the question differently, Is it not probable that as many children manage to fight the disease successfully while attending school as do adults in their ordinary lives?

I said at the beginning of this paper that I would bring forward some evidence to show that phthisis becomes more frequent as children approach the age of puberty.

Dr. Young writes that as age progresses the protective mechanisms become in general progressively more evolved.

Again, he says that, "Fibro-caseous or chronic pulmonary tuberculosis in children conforms to the characters observed in adults. Rare before six years of age, it becomes more common after that age, and the lesions are less often apical than is the case in adults, but clinically they differ but little from corresponding cases in adults." He further states that the cases are often chronic in course, and of fairly good prognosis under favourable circumstances.

Dr. Young's experience is confirmed by other writers from a different standpoint—that of the death returns.

Dr. R. W. Philip analyses the death-rate from pulmonary tuberculosis among children in Scotland. He shows that the death-rate from phthisis from ten to fourteen is nearly double that from five to nine.

(The children are grouped in four age-groups, namely, under one year, then those of one to four, five to nine, and ten to fourteen. Between 1901 and 1905 the death-rate from phthisis per 10,000 of the population for children under one year was 4·6. From one to four years of age it is 4·4, and from five to nine it drops to 3·2, but from ten to fourteen it rises to 6·1.)

He states that, "The most remarkable, truly astounding fact which seems fairly deducible is the part which the *school life* of the child seems to play in increasing liability to, and mortality from, tuberculosis." Further on he says: "The facts seem to constitute a grave indictment against ordinary school life and urgently call for serious consideration." Dr. Philip concludes his paper by urging the need for special open-air schools for tuberculous children, and also the pressing duty incumbent on school boards to reform the ordinary class-room and to demand much freer ventilation.

Personally, I think so many factors must be considered that I cannot agree with Dr. Philip as to the effect of school life. The fact that the death-rate from phthisis of the girls is so much higher than that of the boys points to some other important factor.

In addition to the demand for better ventilation I would add the need for efficient warming. The Board of Education gives 60° F. as the minimum temperature permissible in the Infants' Department of a school. It is a common thing to find the temperature below 50° in these and other departments, and teachers have not seldom informed me that in cold weather the temperature has been below freezing-point when the school opened at nine o'clock, and very little better three hours later. The ordinary open grate by itself is utterly inefficient for warming large class-rooms, and it is criminal to keep children, especially infants, in class at such temperatures. When seen in these surroundings they are blue with cold, and the windows are all—very naturally—shut. To keep children for hours in cold, stuffy class-rooms is the worst possible treatment for any cases of early phthisis which may be present.

The point, raised by Dr. Philip, is of such interest that I obtained from the Registrar-General the corresponding figures for England and Wales. These figures show the same thing for England as described in regard to Scotland and Ireland.

The annual mortality from phthisis per million in England and Wales for both sexes in the ten years 1891 to 1900 was as follows: "From five to ten years of age, 206; from ten to fifteen, 368." For the five years 1901 to 1905 the same thing is shown, as follows: "From five to ten years of age, 172; from ten to fifteen, 287." In other words, the very high mortality from phthisis between the ages fifteen to thirty-five, a mortality that accounts for one third of all the deaths occurring at those ages, has really set in before the age of fifteen. Instead of considering phthisis as a disease demanding recognition from fifteen years onwards, we must realise that it has become an important factor some five years earlier—that is, from the age of ten or thereabouts.

The Registrar-General's figures show clearly that the steady increase in phthisis mortality has set in by the age of ten, instead of at fifteen as seems usually believed.

Hence, in order to treat phthisis successfully, one must sort out the cases in school so that one may undertake the cure at an age when we have the most chance of success.

Abstracts from Current Literature.

Medicine.

Two cases of congenital hemi-spasm of the lower lip in infants ('*La Clin. Infant.*,' January 1, 1909, No. 1, p. 1).—**G. Variot** and **M. Bonniot** reported these to the Soc. des Hôp.; both were boys. Case 1 was aged 12 days; when he cried the mouth was awry like cases where the facial nerve has been pressed on by forceps, but close examination showed that the orbicularis palpebrarum and other muscles were normal. As soon as the child ceased crying the grimace disappeared and the face became normal, although the lower lip seemed slightly inclined to the right and the buccal slit was not absolutely horizontal. The head was always turned to the right when lying in the cradle. When six months old the deformity still was apparent on crying but in a less degree, and also on laughing there was slight twisting of the mouth, but to a less degree than on crying. In the middle of the neck a transverse oblique on the right side was noted as if the platysma on this side contracted more than on the other, where no fold existed. Case 2, a month old, presented an exactly similar aspect except that the twisting was on the left side. On palpating the two halves of the lower lip in repose, it was noticed in both infants that there was no appreciable difference in consistence. The electrical reaction of all the facial muscles was normal except half the orbicularis of the lower lip, and indicated a kind of *atony* limited to a single muscle, the result of which was to produce a kind of spasmodic grimace when certain muscles came into play. The electro-diagnostic examination of this muscle was interesting: it reacted normally to faradism but to galvanism there was a partial reaction of degeneration, and indicated an arrest of development of the muscle. In order to explain the peculiar aspect of the lower lip when these infants cried, it must be borne in mind that the orbicularis oris forms a sphincter on which the elevators and depressors of the commissure are fixed, *i. e.* for the lower lip the *triangularis*, the *quadratus*, and the *platysma*. These three muscles in the cases before us, not finding sufficient counter-resistance, retract abnormally on the lower lip of the same side, producing the spasmodic grimace.

VINCENT DICKINSON.

Gastric radioscapy: vomiting in an aërophagic infant ('*La Clin. Infant.*,' January 1, 1909, p. 13).—**A. Lesage**, in a paper read before the Soc. de Biologie, says that the normal nursling is aërophagic, and that when this aërophagy becomes excessive gaseous distension of the stomach provokes vomiting. It is well known that in the adult vomiting may depend on the same mechanical cause. The air swallowed by the nursling during a feed issues from the stomach in inverse proportion to the milk which enters the gastric cavity. When the air swallowed is in excessive quantity, the stomach is filled with a small quantity of milk and a large quantity of air; the resulting distension provokes a violent contraction and expulsion of air and milk. The fact of vomiting being produced in this way has been demonstrated by gastric radioscapy. It is enough in such cases in order to prevent vomiting to watch the feeds, giving plenty at longer intervals. Sometimes aërophagy is accompanied by spasm of the cardia; the air swallowed cannot escape from the stomach when once it has got there, and will only be expelled when the distension attains to such a degree that the stomach repels; then vomiting

ensues owing to violent gastric contractions. In a second group of cases, *aërophagy* with spasm of the cardia, as shown by radioscopy, the feeds which are not followed by vomiting are those in which only a small proportion of air has entered, due to small feeds given at short intervals. Radioscopy thus shows us the existence of a variety of vomiting in the nursing not hitherto described—the vomiting caused by excessive *aërophagy* with or without spasm of the cardia. It is a fact that the vomiting of inanition and of spasmodic gastritis often depend on one or other of these varieties.

VINCENT DICKINSON.

Observations on the leucocytosis produced by the toxin of the diphtheria bacillus, with especial reference to the changes which follow the injection of antitoxin (*Journ. of Path. and Bact.,* vol. xii, p. 154).—H. R. Dean draws the following conclusions from experiment performed in the Physiological Laboratory and in the Jenner Clinical Laboratory at St. Thomas's Hospital. (1) After the experimental injection of diphtheria antitoxin there is great leucocytosis, due to an increase in the number of polymorphonuclear cells. (2) After the injection of the diphtheria toxin degenerative changes can be demonstrated in both the white and red cells. In the latter polychromatophilia is often well shown. A reduction in the number or a complete disappearance of the coarsely granular eosinophilic cells is, as a rule, observed. (3) No myelocytes were seen. (4) The changes in the blood which follow the experimental injection of diphtheria toxin are similar to those seen in cases of diphtheria occurring in the human subject. (5) A dose of antitoxin given simultaneously with the toxin completely protects the animal and prevents leucocytosis. (6) When a sufficient dose of antitoxin is administered within a short time of the injection of toxin the number of leucocytes rapidly falls to normal. (7) Where a considerable interval elapses between the injection of toxin and the injection of antitoxin no reduction in the leucocytosis occurs. (8) In two cases of diphtheria in children the interval between the onset of the disease and the employment of antitoxin was relatively short, and in these cases a considerable reduction in the leucocytosis appeared to follow the use of antitoxin. (9) No reduction in the leucocytosis was observed in four cases in which there was a relatively longer time before antitoxin was used. (10) A marked reduction in the leucocytosis within the first twenty-four hours after the injection of antitoxin probably indicates a good prognosis. (11) A sufficient dose of antitoxin completely protects the blood-cells from degenerative changes.

JAMES E. H. SAWYER (Birmingham).

Juvenile tabes and general paralysis from acquired syphilis (*Arch. de Med. des Enfants,* July, 1908).—E. Apert, Lévy-Fraenkel, and Ménard report the case of a girl, aged 15 years, suffering from tabes which terminated with general paralysis. At the age of 2½ years she contracted syphilis from her parents. Her father died from tabes and general paralysis. The mother contracted syphilis from her husband, and later developed signs of tabes. The patient had the following symptoms: Romberg's sign; eyes—inequality of pupils, Argyll-Robertson's pupil, slight irido-choroiditis; sensation normal; knee, Achilles tendon, and triceps-jerks absent; speech normal; fibrillary tremor of tongue; mentally, very obstinate and liable to fits of temper, slight hallucinations, no grandiose ideas. The authors quote six other cases: (1) General paralytic infant, mother having tabes and

general paralysis (Gianelli). (2) Child, aged 13 years, general paralysis; father general paralytic, mother tabetic (Kutner). (3) Child, aged 15 years, tabes; father tabetic (Brusch). (4) Tabetic child; father tabetic (Babinski). (5) Child, aged 15 years, tabes; father died of general paralysis (Linser). (6) Child, aged 15 years, tabes; mother tabetic (Cantonnet).

JAMES E. H. SAWYER (Birmingham).

The cutaneous and ophthalmic tuberculin test in infants (*Arch. of Pediat.*, 1908, p. 801).—H. L. K. Shaw employed these tests on eighty-one infants under twelve months of age in whom there were no clinical and physical signs of tuberculosis. None showed any reaction to the ophthalmic test, in which both human and bovine tuberculin of various strengths had been employed. The cutaneous test gave one positive reaction. This was in an old case of empyema with a discharging sinus. The pus was injected into a guinea-pig, which died later of tuberculosis. Shaw concludes that these tests are not reliable in infants, since less than 1·5 per cent. react to either test, whereas the percentage of tuberculosis in infants ranges from 2·3 to 19·9 per cent.

J. D. ROLLESTON.

Empyema and purpura (*Arch. of Pediat.*, 1908, p. 838).—F. Huber.—A boy, aged 2½ years, with no history of tubercle, syphilis, or any hæmorrhagic tendency, was admitted to hospital with the signs of empyema. Numerous petechiæ were present on the limbs and buttocks, relatively few on the trunk, and there was a small ecchymotic area round the exploratory puncture. There was no swelling of the joints nor periosteal hæmorrhage. Operation was delayed for a few days, and orange juice and gelatine were given to improve the blood condition. On incising the pleura a large mass of clotted blood followed by a considerable quantity of pus was evacuated. Complete recovery took place.

J. D. ROLLESTON.

Hæmorrhagic nephritis in mumps (*Pediatrics*, 1908, p. 627).—J. E. Hunt.—A girl, aged 5 years, a few days after a mild attack of mumps became drowsy and feverish. The urine was scanty and contained much blood. Generalised œdema developed; complete recovery finally resulted.

J. D. ROLLESTON.

Typhoid fever in infants (*Pediatrics*, 1908, p. 663).—J. L. Morse records four cases in children whose ages were 11, 16, 18, and 19 months. All were admitted within one month to the Infants' Hospital at Boston, in which there had been only two other cases within the last twenty years. Widal's test was positive in all on admission. All showed rose spots, and in three the spleen was palpable. In three the pulmonary signs were unusually prominent. The duration of the fever was comparatively short. There were no marked nervous symptoms.

J. D. ROLLESTON.

The doctrine of difficult dentition (*Pediatrics*, 1908, p. 595).—T. J. Elterich in twenty years of pediatric practice has never seen a single case which could be properly diagnosed as difficult dentition. Acute otitis media, which may exist without any symptoms referable to the ear, should always be suspected in cases of pyrexia without obvious cause.

J. D. ROLLESTON.

Pediatric study in London and Vienna (*Pediatrics*, 1908, p. 681).—H. M. McClanahan thinks that Vienna excels in opportunities for laboratory

work and private instruction, and London in its enormous amount of clinical material.

J. D. ROLLESTON.

Pneumonia occurring simultaneously in brother and sister ('*Gaz. des Hôp.*,' 1908, p. 1779).—**Railliet**.—A boy, aged $4\frac{1}{2}$ years, and his little sister, whose age is not stated, were attacked at eleven hours' interval by pneumonia. Both had been sleeping in the same bed. A second brother, aged 2 years, who had been sleeping in a separate room, escaped. The sister had a mild attack; the brother's illness was more severe. Pain in the region of the umbilicus and right iliac fossa, with vomiting and absence of auscultatory signs in the chest was the cause of the boy being admitted to a surgical ward as a case of appendicitis. It was not till the third day that the diagnosis of pneumonia was made. The greater severity of the brother's attack is probably to be attributed to diminished resistance in consequence of repeated attacks of appendicitis, mumps, and a recent sore throat.

J. D. ROLLESTON.

Lymphangioma of the orbit ('*Med. Press*,' March 10, 1909).—**Bergmeister** exhibited at the Gesellschaft der Aertze of Vienna a child, aged $2\frac{1}{2}$ years, with a thick upper eyelid on the left side, which was due apparently to an ill-defined soft swelling extending under the skin to the temporal region. The swelling was somewhat compressible, but was not affected by compression of the jugular. The ball of the eye was not protruding, but, on the contrary, was sunken in the socket. The fundus of both eyes was perfectly normal. In addition there were numerous pigmented patches over the chest and back. According to Recklinghausen's theory this is the first symptom of neuro-fibromatosis in the cutaneous nerves. This neuro-fibroma, sometimes known as Ranken's neuroma, is difficult to distinguish clinically from lymphangioma, as both depend upon the same anatomical process.

T. R. WHIPHAM.

Neuro-fibromatosis ('*Med. Press*,' March 3, 1909).—At the same Society **Zumbush** presented a man, aged 22 years, with a large, dark, hairy, pigmented mark on the left cheek and temple. Other thick, dark, bristly patches were scattered over the trunk and arms, ranging from the size of poppy-seeds to the palm of the hand. They were sharply defined and the skin around was unchanged. In the patches were concentric rings, rising in tiers, of a livid colour and hard, but some of them were soft and could be pressed level with the healthy skin. The right tibia from the middle outwards had a sabre appearance, while posteriorly it was crooked and irregular. The foot was in a condition of pes planus valgus. The fibula under the Röntgen rays appeared as a thin bristle, but not bent or irregular like the tibia. All the changes were considered to be congenital morbid productions.

T. R. WHIPHAM.

Erythema infectiosum ('*Med. Press*,' March 3, 1909).—**Escherich** also showed two children with what is known as erythema infectiosum, which, he considered, would be more correctly described as erythema multiforme. The children had a rash resembling scarlet fever and measles combined. It is epidemic and attacks children of from four to twelve years of age. The youngest patient he has ever seen suffering from the disease was fourteen months. The rash appears on the face without any constitutional prodroma in the form of bluish-red, slightly raised patches extending

from the alæ nasi to the ears, the forehead to a great extent escaping. The lymphatics below the ears are usually tender and painful to the touch. Along the extensor surfaces of the limbs, as well as in the gluteal region, the morbiliform rash is met with in large patches, but it is less pronounced and not so well defined over the trunk. It usually lasts from eight to fourteen days with varying intensity, having a reticulated marble appearance before disappearing. Lymphatic enlargement, except below the ears, mucous catarrh and general disturbance are all absent, neither are there any sequelæ or other complications. It is evident that during an epidemic scarlet fever, measles or rōtheln may be easily confounded with this disease. Some authors, like Hebra, draw distinctions between this infectious disease and erythema multiforme, although both agree in the localisation and efflorescence of the rash, but differ in respect to contagion, affirming that erythema multiforme is not infectious, while erythema infectiosum is. Escherich expressed some doubt about the contagious nature of the disease, as he had not found it to spread in hospital, where he had frequently met with it. He thought that both these morbid changes might be included under the term "erythema multiforme." Ehrmann agreed with Escherich that this was only an abortive form of erythema multiforme exudativum, and was not an acute exanthema. T. R. WHIPHAM.

Diphtheritic paralyses (les paralysies diphthériques) (*Gaz. des Hôp.*, January 18, 1908, pp. 75 and 111).—**Chéné** gives a very full review of the subject. The article does not lend itself to abstracting. A good bibliography is appended. ERNEST JONES (Toronto).

Congenital pyloric spasm and congenital hypertrophic stenosis of the pylorus in infancy (*Amer. Journ. of the Med. Sciences*, July, 1908, vol. cxxxvi, p. 1).—**Henry Koplik** gives a general account of the condition and reports fifteen cases, each of which is separately discussed. He holds that the term covers a number of different pathological conditions, having different prognoses and treatment. He is strongly in favour of medical treatment. ERNEST JONES (Toronto).

Peculiarities of the symptomatology of rheumatism in children (*Amer. Journ. of the Med. Sciences*, July, 1908, vol. cxxxvi, p. 66).—**C. H. Dunn** calls special attention to the frequency with which rheumatism in children may make its onset with cardiac symptoms alone. He says that it begins with arthritic symptoms in only 40 per cent. of all cases. There are seven clinical types of rheumatism in children: (1) The mild arthritic type; (2) the severe arthritic type, occurring in older children; (3) latent type, beginning with fever; (4) mild primary endocarditis; (5) severe primary endocarditis, characterised by fever and cardiac incompetency; (6) mild pericarditis; (7) severe pericarditis, always with effusion.

ERNEST JONES (Toronto).

Pathology, prophylaxis, and treatment of the umbilical cord (*La Semana Med.*, September 24, 1908).—**Chueco** after observing that one chapter of medicine, that of tetanus and erysipelas of the new-born, will soon pass into history, gives an account of infective diseases of the umbilicus. He recommends that the bath-water for new-born infants be previously boiled and then cooled to the proper temperature, and that the bath be sterilised by heating with alcohol, and, as most important, that the nurse

should wash her hands thoroughly each time before dressing the navel, and small lesion be attended to carefully and thoroughly. M. D. EDER.

Two cases of mumps in sucklings (*St. Petersburg med. Wochens.*, November 22, 1908).—**Hollmann's** first case was an infant, aged 9 months. Many of the family had suffered from mumps, including the mother. The right parotid gland was affected in this infant; beyond slight rise of temperature there was nothing specially to be noted. The second case was a girl, aged 11 months; there had been other cases in the house. When the child was brought there was suppuration in the left parotid gland, which was incised. M. D. EDER.

Total paralysis of seventh right facial nerve in a boy, aged 7 months (*Ally. Wien. med. Zeitung.*, November 24, 1908).—**Hochsinger** showed this case at the Pediatric Section of the Vienna Medical Union. Forceps was employed at birth, but no paralysis was then noticed, and the child thrived splendidly till it was six and a half months old, when it was unwell for a few days, the doctor who attended finding no cause. On October 2 it was apparently quite well; on the morning of the 3rd the paralysis was found and the child was feverish. A fortnight later the paralysis remained. There was no disease of eye or ear, and the diagnosis of peripheral facial paralysis was confirmed by the reaction of degeneration. The author, after dealing with other possibilities, believed that it was a case of elective disease of the nerve related with the then prevalent epidemic of acute anterior poliomyelitis. M. D. EDER.

A new skin phenomenon in sucklings (*Wien. klin. Rundschau*, September 13 and 20, 1908).—**Blattner** has for some time been investigating this reflex, which was first observed by Pfaundler, who noticed, in the case of an extremely atrophic infant, that whenever the skin of the abdomen was touched the lower limb of the same side was drawn up. Pfaundler also observed, in similar cases, that when the relaxed abdominal skin was gently touched there appeared a peculiar wrinkling and puckering of the skin of the lower limb. This spread rapidly over the whole surface, back and front, and after the skin had remained a little while in this condition, disappeared. Pfaundler called this the "shagreen skin-sign." At first sight it seems to be identical with the goose-skin reflex, but Blattner shows that there is only a certain resemblance. Incidentally he remarks that this latter sign has never been thoroughly examined; the only good account of it is to be found in Mackenzie's article in *Brain* (1893). The shagreen skin-reflex was obtained by gentle stroking, rubbing, or massage of the abdomen. The reflex usually occurred upon the same side, but in some cases both lower limbs reacted. The reflex started in the groin, spreading upwards, and then the whole skin was affected down to the ankle, the extensor more markedly than the flexor surfaces. No reflex occurred in the upper limbs, abdomen, chest, or back. It was sometimes obtained when the upper or lower part of the thigh was stroked, but in this case was more marked when the abdomen was stimulated. In a few cases it was produced when the napkin was taken off or by blowing upon the skin. The reflex was not obtained by using ice, hot or cold water, or by faradic current. The sign is very evanescent, but can be reproduced again and again. It only occurs in badly nourished children with relaxed skins, whose cushion of fat has largely disappeared. As soon as the children improve with better nourishment and there is a renewed

turgescence of the skin the reflex cannot be obtained. In healthy sucklings and in all who are more than one year, whatever their atrophic condition may be, there is no reflex. Blattner, therefore, does not regard this as a physiological sign like goose-skin, and he gives reasons for regarding it as a true reflex brought on by contractions of the muscle in the upper layers of the skin. Further observations may lead this reflex to be regarded as of some diagnostic value in the diseases of sucklings.

M. D. EDER.

Pathology.

Splenic anæmia in children (*Munich Society for Children's Diseases*, March 5, 1909).—By splenic anæmia Benjamin understands a disease of early life which sets in at the end of the period of suckling, and in which is developed an anæmia of a varying degree with decided enlargement of the spleen. The disease may cease in the second or third year of life, or the child may succumb in that period to the primary disease or some complication. The blood-count in individual cases shows great variations: a severe form of the disease may occur with a normal blood-count, and slight cases with decided diminution of the erythrocytes. The colour index is normal, or only slightly below normal: the leucocytes vary from 5000 to over 100,000; the myelocytes may be enormously increased or be entirely absent, while normoblasts and megaloblasts are always met with. The disease is always accompanied by more or less severe rickets. As in rickets a reduction of the polynuclear neutrophiles is met with; splenic anæmia, however, shows itself essentially in the predominance of non-granular cells of bone-marrow. An exhaustion of bone-marrow may be considered to be the commencement of the disease, indicating a high degree of myelopathy. As compensatory processes are extra-medullary foci of blood formation whereby erythropoiesis and indirectly leucopoiesis occurs. Uncomplicated cases must always occur, with a relative reduction of polynuclears. As the disease shows a constant increase in the large mononuclears, the author considers whether these cells are not the cause of the splenic tumour in children, and whether they do not take a share in the myeloid metaplasia of this organ in the splenic anæmia of infants.

J. E. BULLOCK.

The Spirochæte pallida and congenital syphilis (*Journ. of Path. and Bact.*, January, 1909).—McIntosh has studied the distribution of the *Spirochæte pallida* in congenital syphilis. It is found in greatest numbers in the liver, and it is also present in the lungs, spleen, suprarenal glands, kidney, and skin. In the skin, as in the liver, it is in enormous numbers. The author failed to find it in the placenta or in the umbilical cord. He suggests, therefore, that the infection is maternal, the spirochætes being carried in the blood to the liver, where they multiply, and that thence they are distributed to the rest of the body. The organism has a special affinity for structures of the nature of connective tissue or glandular epithelium, and it is especially plentiful in the connective tissue around the blood-vessels.

T. R. WHIPHAM.

Polyarteritis acuta nodosa and periarteritis nodosa (*Journal of Path. and Bact.*, vol. XII, p. 31).—W. E. Carnegie Dickson in a paper on the above subject describes the case of a boy, aged 14½ years, who was admitted into the Royal Infirmary, Edinburgh, in May, 1906. The case was thought to be probably one of tuberculous or possibly pneumococcal

meningitis. At the post-mortem examination the following conditions were found: Nodules of polyarteritis acuta nodosa on the small and medium-sized arteries of the heart, liver, spleen, kidneys, mesentery, brain, and spinal cord; subacute nephritis and infarcts in the kidneys; rupture of, and hemorrhage from, aneurysmal dilatations upon surface vessels of brain; peculiar infiltration of lungs. Evidence of old-standing tuberculosis of mesenteric and other glands. Microscopically the earliest discoverable changes are found in the outer coat. The process rapidly spreads inwards so that the most complete destructive lesions are to be found in the muscular coat. These are accompanied by local inflammatory changes, and are followed by giving way of the internal elastic lamina and the other coats of the vessel wall. Thrombosis of the contents of the lumen or aneurysmal dilatation occurs with proliferation changes in the outer and inner coats of the vessel. Secondary changes are—infarction, necrosis, hemorrhage, etc., in the organ or tissue supplied by the affected artery. The infection reaches the vessel wall possibly through the vasa vasorum, or perhaps by the perivascular lymphatics. The cause is almost certainly some bacterial or other infective organism or its toxin. Staining for all ordinary pathogenic bacteria and for the *Spirochæte pallida* gave negative results. The condition has to be distinguished from periarteritis nodosa, which is a true periarteritis, nodular in distribution, and in the majority, if not in all, of the cases is syphilitic in origin. The author quotes from literature adult cases and also the following cases in children of polyarteritis acuta nodosa: Female, aged 10 years (Eppinger); infant, aged 2½ months (Krzyżkowski); boy, aged 14 years (Jansco and Veszprémi); male, aged 18 years (Mönkeberg).
JAMES E. H. SAWYER (Birmingham).

Surgery.

The operative treatment of pericarditis ('Wien. klin. Rundschau,' November 8, 1908).—**Venus**, after giving the indications for paracentesis, regards the presence of pus, which has been certified by exploratory puncture, as necessitating pericardiotomy after previous resection of a rib. This should be followed by careful irrigation with sterilised salt solution and drainage. The prognosis of any pericarditis treated by operation depends almost entirely on the original cause of the disease. M. D. EDER.

Atresia recti ('Med. Press,' March 3, 1909).—**Moszkowicz**, at the Gesellschaft der Aertze of Vienna, showed an infant, aged 1 month, whom he had operated upon for atresia of the rectum. He first made an incision over the left iliac fossa and opened the sigmoid flexure, whence a large quantity of meconium escaped without any subsequent peritonitis. After the child had recovered and the bowel had been fairly emptied an attempt was made to complete the opening at the rectum on the seventeenth day. Before commencing the operation the *cul-de-sac* was washed out and a fluid solution of metallic bismuth was poured in through the fistula and the part examined by the Röntgen rays. It was then seen that the *cul-de-sac* passed down close to the perineum. A pair of forceps was inserted and the part distended, so that a circular opening could be made from the outside to form an anus. The mucous membrane of the bowel was then brought down and stitched to the skin. The child has since been able to pass its motions by the natural channel, while the fistula closed without any other interference. There was, however, subsequently a tendency to narrowing of the lumen of the bowel. T. R. WHIPHAM.

Myogenic contraction (*'Med. Press,' February 24, 1909*).—**Erben** also exhibited a child, aged 3 years, who, having recovered from a broken arm, had all the symptoms of myogenic contraction. During the treatment the fingers assumed a claw-like appearance under the bandages. There was no lesion of the nerves, and the phalanges after extension contracted firmly, showing that the conducting power of the radial nerve was intact. There was no muscular atrophy in the hand or fingers, as usually occurs in peripheral paralysis. He thought that the cause was either a fibrous inflammatory retraction or possibly an ischæmic condition of the muscles. Moszkowicz was of opinion that the contraction was due to ischæmia, which was not infrequent in fractures of the lower third of the humerus. This lesion was usually attributed to a rupture of the cubital artery producing a hæmatoma and so preventing the formation of a collateral circulation. In this way the whole group of muscles of the forearm is affected. It is possible that a necrosis and degeneration of the fibrous tissue may be induced, but it is purely of a myogenic nature and never under any circumstances akin to neurogenic contraction.

T. R. WHIPHAM.

Stricture of the œsophagus; with a report of eight cases from the Children's Hospital of Philadelphia (*'Univ. of Penna. Med. Bull.,' December, 1908, p. 298*).—**A. P. C. Ashhurst** reports eight cases of œsophageal stricture in children below the age of seven; three were only two years old. The cause was in seven cases the contraction of an ulcer following burns from lye. In most of the cases the stricture had fully developed in under a year. The distance from the dental margin varied from nine to twenty-three centimetres. The various operative procedures are fully considered.

ERNEST JONES (Toronto).

An appendix abscess in a twenty-seven months child; with an analysis of infantile appendicitis in the Johns Hopkins Hospital (*'Bull. of the Johns Hopkins Hosp.,' February, 1909, p. 31*).—**T. W. Churchman**.—Notes of nine cases of appendicitis in children under five years of age are here given. They were all operated upon and seven recovered; the two deaths were due to general peritonitis. A very interesting review of the subject based on previous publications and on the Johns Hopkins records is then added. From the latter the following facts may be quoted: Of 1223 cases of appendicitis admitted to the surgical clinic 9 were under five years of age and 199 under fifteen (16 per cent. of the whole series). Of 1001 cases recorded by McCosh 17 (1·7 per cent.) were below the age of five, and 153 (15·3 per cent.) under the age of fifteen. The diagnosis is discussed and the following rules laid down: "All urinary symptoms in children should suggest the possibility of appendicitis, and in infants with apparent hip-joint disease, particularly if the thigh be flexed, the same possibility should be kept in mind. Cathartics should never be given for constipation unless it is certain that appendicitis is absent. Palpable resistance on the right side by rectal examination is one of the most frequent findings; the importance, therefore, of rectal examination in any doubtful case is obvious. Pathologically, two features of the complaint differentiate it from the adult cases: (1) a tendency to early perforation, and (2) the frequency of early peritonitis.

ERNEST JONES (Toronto).

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ON CONGENITAL HEART AFFECTIONS, ESPECIALLY IN
RELATION TO THE DIAGNOSIS OF THE VARIOUS
MALFORMATIONS.

THE WIGHTMAN LECTURE FOR 1909.*

By GEORGE CARPENTER, M.D.,

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(Continued from page 404.)

Coarctation of the Aorta.

Coarctation of the aorta is the name which has been given to stenosis or atresia of that vessel, either at or below the isthmus, that part which lies between the left subclavian artery and the ductus arteriosus. Soon after birth that narrow section of the aorta which is not much used during intra-uterine life is apt to be smaller than neighbouring parts of this artery, but when the circulation is reconstructed this part soon acquires its proper proportional relationship. Bonnet describes two types. In one, the *infantile*, there is diffuse narrowing of the aorta at the isthmus. In the other, the *adult* form, there is an abrupt constriction as of a cord at or near the insertion of the ductus arteriosus. The infantile type is developmental

* Delivered at the Section for the Study of Disease in Children of the Royal Society of Medicine, June the 24th, 1909.

and may consist of a moderate stenosis only, or owing to the complete failure of development in regard to that part of the fourth branchial arch which lies between the ductus arteriosus and the subclavian artery the part corresponding of the aorta—the isthmus—is represented by a cord only or completely disappears. The *adult* form he considers is not of developmental origin, because it does not occur in the fœtus and is not met with until the closure of the ductus arteriosus, and is brought about by the act of closure of the duct itself, elements of which are incorporated in the aorta, and which by their contraction constrict that vessel as with a ligature. In the infantile type of cases patency of the ductus arteriosus is common, and in the adult type that channel is usually closed. In the adult type extensive collateral circulation is common according to Bonnet. In the infantile type associated cardiac developmental anomalies are common and often severe; in the *adult* type the anomalies are usually unimportant and rarely severe. In the adult type the percentage of cases without associated cardiac developmental anomalies is far greater than in the *infantile*.

But the association of the adult type with even a smaller proportion of congenital anomalies, and even though they be of minor import, such as bicuspid aortic valves, fused aortic valves, irregular origin of the great vessels, happens too frequently to neglect the suspicion which these associations impart.

The infantile type of stenosis is rarely seen after infancy. It is the adult type which provides the well-known clinical picture of coarctation of the aorta, which comprises external evidences of collateral circulation and inequalities between the pulses of the upper and lower extremities. The arteries in the neck are full and strong and perhaps enlarged; those in the lower extremities give a slow, weak and retarded pulse. The collateral circulation is usually carried on by the union of the first intercostal arteries of the subclavian anastomosing, with enlarged intercostal arteries from the aorta. The posterior scapular artery from the third part of the subclavian, passing through the neck muscles along the vertebral border of the scapula, anastomoses with the intercostals of the upper interspaces close to the spine. The subscapular from the first part of the axillary artery anastomoses in the axilla with the long thoracic which unites with the intercostals. The internal mammary from the first part of the subclavian unites with the aortic intercostals by its anterior intercostal branches. Enlarged phrenic arteries from the abdominal aorta anastomose with enlarged phrenic branches from the internal mammary. The enlarged superior epigastric branches

of the internal mammary anastomose by enlarged branches with the superior epigastric of the external iliac. In these cases, therefore, enlarged and tortuous arteries may be expected to appear along the scapulæ, in the axillæ, and on the abdomen.

I have met with two examples of this disease, one probably of the *adult* type and the other of the *infantile*. The former occurred in the case of a syphilitic boy, aged 5 years.* He displayed enlarged, tortuous and pulsating arteries in the neck, about the scapulæ, axillæ and abdomen. Very feeble pulsation could be detected in the femorals, which felt like rigid cords. The abdominal aorta could be felt feebly pulsating. *Per rectum* a number of enlarged and tortuous arteries could be felt by binannual palpation in the abdominal wall, and a collection of enlarged and tortuous vessels was detected in the pelvis, especially in the neighbourhood of the sacro-sciatic notch, which felt like a collection of worms. A vessel which was dissected out in the abdominal wall did not pulsate like an artery, and the blood looked venous. The microscopical appearances were natural. The left ventricle was hypertrophied and a murmur was detected at the base, better on the right side than the left, and conducted better to the right clavicle than the left. It was heard also over the right chest behind and in the right axilla, and over the spine of the left scapula. I did not have an opportunity of examining this case post mortem. I found tubercles in the choroid, and the mother, learning from the ward sister that he had tuberculous meningitis, removed him.

My second case occurred in a boy, aged 3 years. The left ventricle was hypertrophied and dilated, and there was a loud systolic bruit all over the chest, back and front, and conducted into the neck. At the apex there was a double bruit, systolic and diastolic, and a systolic thrill. The second sound at the base was thick. The carotids pulsated violently, and pulsation could be felt at the finger-tips. The pulse was not aortic in character.

The aortic and mitral valves were thick at their edges, and the former irregular along their free border. The pulmonary valves were thickened. The aorta, which was pouched immediately above its valves, was contracted at the isthmus to about a No. 7 catheter. The ductus arteriosus was patent and of good size. The descending aorta was normal. The subclavian, internal mammary and superior intercostal arteries were of normal size.

This latter case illustrates the bruit and the area of its con-

* "A Case of Coarctation of the Aorta," 'Reports of The Society for the Study of Disease in Children,' vol. viii, p. 158.

duction, which may arise in these cases if the aortic valves be affected, as they sometimes are. If the aortic valves were normal probably a systolic bruit heard loudest over the second left interspace would be succeeded by a ringing aortic second sound.

From the literature it appears that patients with coarctation of the aorta may live long and the condition not be suspected. In some death takes place suddenly and without obvious reason, sometimes from rupture of the aorta. In a case recorded by T. J. Horder, of dissecting aneurysm of the aorta in a boy, aged 12 years, rupturing into the pericardium, this appears to have been an example of stenosis of the isthmus.* Or death may occur from heart failure preceded by the signs and symptoms of mitral disease.

Gossaget† has recently reported a case of coarctation of the aorta in a boy, aged 17 years, illustrated by a skiagram. There were systolic and diastolic bruits over the aorta, the former conducted along the great vessels of the neck and over the spine as low as the third dorsal vertebra.

Congenital Aortic Stenosis and Atresia.

Congenital aortic stenosis and atresia are much rarer than the corresponding defects at the pulmonary artery. Conus stenosis in this situation takes the form of a thickened ring of the endocardium, just below the aortic valves, which involves the base of the anterior mitral cusp, and is ascribed by Keith to arrest of development. The danger of this rare anomaly lies in its tendency to become the seat of endocarditis. In aortic atresia, brought about by such conditions as obliteration at the root or by fusion of the cusps, the left ventricle atrophies and the circulation is conducted through the foramen ovale, patent septum ventriculorum, and patent ductus arteriosus. The life of such cases has been limited to a few weeks. In aortic valvular stenosis there are two forms: one in which the septum ventriculorum is perfect, the other in which it is deficient. In this latter variety other developmental anomalies are the rule. The clinical interest is centred in the former variety, because these cases may have a long life, and the damaged valves are liable to endocarditis. Fisher‡ describes as one cause for valvular stenosis a

* "Dissecting Aneurysm of the Aorta in a Boy, aged 12 Years; Rupture into Pericardium" 'St. Bartholomew's Hospital Reports,' vol. xliii.

† 'Proc. Roy. Soc. Med.,' Clinical Section, May, 1909, vol. ii, No. 7, p. 210.

‡ 'Reports of the Society for the Study of Disease in Children,' vol. iv, p. 68.

band just below the centre of the valves running round them and forming a diaphragm almost independently of the cusps themselves. In the two cases of aortic stenosis in infants, also shown by Fisher* and already mentioned, in one the segments of the aortic valve were much thickened and adherent to one another, and in the other there were organised vegetations on this valve and on the pulmonary also. In the former there were no associated abnormalities, but in the latter there was a defective septum ventriculorum, a communication between the aorta and pulmonary artery above the valves and several congenital somatic defects. Fusion of the cusps into a diaphragm with a small central aperture is apt to occur, but this condition is less frequently combined with other malformations than happens with the corresponding condition of the pulmonary valves.

Aortic disease in children of the acquired type is not as rare as is commonly supposed, and some of the cases are no doubt of congenital origin. Cantley† showed such a case to the Society for the Study of Disease in Children in 1901, in a boy, aged 7 years, the condition being diagnosed at two years of age. Cases have also come under my observation. A boy, aged 11 years, with divergent recti was brought to me by his parents for an opinion because it was proposed to operate upon him for that condition. He was supposed to be perfectly healthy, and advice was not sought as to the health of his organs. As a matter of routine I stripped and examined him. I was surprised to discover that he had typical aortic disease, associated with a double bruit. He had contracted scarlet fever at eighteen months, but there had been no other illness, and the announcement came as a surprise to his parents and his doctor. A girl, aged $3\frac{1}{2}$ years, who had never had rheumatism, but whose parents were rheumatic, and was not a blue baby but always had a high colour, when seen by me was blue in the face, had purple lips, and marked œdema of the legs. The liver was down to the umbilicus, and there was some free fluid in her abdomen. The red blood-corpuscles numbered only 3,000,000 per c.mm., and the hæmoglobin amounted to 70 per cent. The heart was greatly enlarged, on the right side reaching to the nipple, and on the left the maximum impulse was one finger's breadth outside the nipple-line in the sixth interspace, and the cardiac shadow well outside the nipple. A noisy, harsh, growling murmur was heard at the apex beat where it was loudest, and this was conducted into the vessels of the neck and down to the left elbow. In front it was audible

* *Loc. cit.*

† 'Reports,' vol. i, p. 133.

all over the chest and axillæ, and was heard in the abdominal aorta and both external iliacs as far as the femorals. Behind, it was heard over both backs, better on the left side, and it could be traced all down the cervical and dorsal spine and to the bottom of the sacrum. The second sound over the aortic cartilage was heard with difficulty, if at all, while the second pulmonary was best heard over the third, fourth, and fifth left costal cartilages, and the spaces between them. The first cardiac sound was replaced by the murmur. The point of maximum intensity of an associated systolic thrill was over the sixth interspace, outside the nipple-line, and it was of wide conduction. Later, a further analysis of the murmur at the apex became possible; it could then be broken up into two component parts, one of them being the original growling bruit of extensive conduction, the other a soft blowing systolic murmur distinct from it, and audible over an area which could be covered by a wine-glass. There were occasions, also, on which it was possible to distinguish two varieties of thrill, of synchronous occurrence, one jarring, like the loud bruit, the other soft and purring, like the soft blowing systolic murmur. In a few days the heart became smaller, the liver decreased, the dyspnœa disappeared, the lips and cheeks developed a red colour, and the finger-tips a dull pink, and all the signs of acute heart dilatation and failure disappeared. The pulse then became regular, and of good volume. The murmurs remained. When she was last seen the pulmonary shadow, of small size, was in the third left interspace behind and the top of the heart at the fourth rib. There was no aortic shadow in any of the skiagrams which suggests a small aorta. On the right side the heart was seen by X rays to be two fingers' breadth outside the right sternal margin. To the left the shadow was inside the nipple and with the apex beat as before. The jarring systolic thrill was still best felt over the apex beat, but it was very marked over the epigastrium and it was felt to the right of the sternum, better above than below, and quite well over the manubrium sterni. It was not felt in the neck vessels. The aortic second sound was very feeble if at all heard, and the second pulmonary was accentuated. The murmurs had not changed in character in the interval. The liver was three fingers' breadth below the costal margin in the nipple line. The case is interesting, not only from its age, but also from the fact that the aortic bruit was best heard over the cardiac impulse, and not over the aortic cartilage. The soft blowing mitral bruit probably indicated incompetence from dilatation and not leakage from valvulitis. Another point of clinical

interest, a recognition of which will prevent falling into error, is that aortic disease in children is apt to be associated with a bruit which is heard loudest over the pulmonary area, and not over the aortic cartilage.

Hypoplasia of the Aorta.

Hypoplasia of the aorta is characterised by diminution in size of the aorta and arteries throughout the body, the walls of which are thin and elastic.

The condition was known to Rokitański, who associated it with abnormalities of the external genitalia. Subsequently Virchow discovered that chlorosis, hypoplasia of the arterial system, and a small heart were commonly combined. Under-development of the arterial system retards growth and sexual development, and those with an insufficient arterial system are pale and ill-developed. In a specimen of this condition exhibited by Cantley* and which was removed from a child, aged 8 months, the aorta was small and received but little blood. The pulmonary artery was much dilated, and the heart large and globular. The child was poorly developed and died suddenly. No bruit was heard during life. Hochsinger† has figured the heart of a child, aged 5 months, with transposition of the great vessels in which the pulmonary artery, as in Cantley's patient, was very large. In thirty cases collected by Vierordt which came to post-mortem only one occurred in a child.

A congenital origin has been claimed for this condition, because it is so commonly associated with anomalies in the generative and circulatory systems. A congenital tendency to the dwarfing of the arterial system had been ascribed to tuberculosis in the parents, and it may be due to other states of bad health. The corresponding condition, as has been mentioned, is sometimes seen in the pulmonary artery and its branches.‡

Hypoplasia of the aorta is associated with a dwarfed heart in some instances, and in others with an enlarged heart confined to the left side or involving both ventricles. If the heart be small during childhood it hypertrophies at puberty. The period of danger in these cases appears to belong to adolescence, when heart failure is not unlikely to occur, and this is more likely to arise under physical strain. Apelt § narrates two cases of this disorder in youths, aged

* 'Proc. Roy. Soc. Med.,' Section for the Study of Disease in Children, vol. ii, p. 35.

† Pfandner and Schlossmann, 'Diseases of Children,' vol. iii, p. 479, Shaw and La Feta.

‡ *Loc. cit.*

§ 'Deut. med. Woch.,' 1905, p. 1186.

17 and 21 years, in which acute dilatation of the heart supervened, and with the usual symptoms. Intractable anæmia and subnormal temperatures are common combinations.

The Auriculo-Ventricular Valves.

Defects in the auriculo-ventricular valves are very uncommon. They are commonly combined with other cardiac abnormalities, uncomplicated lesions of the mitral and tricuspid valves being exceedingly rare. Of the two valves the tricuspid is more frequently attacked than the mitral, and of the lesions tricuspid atresia is the commonest.

Rogers and Brickdale * showed, in 1905, to the Society for the Study of Disease in Children a heart which had been removed from a child, aged 2 years, in which the right auriculo-ventricular aperture was closed by a smooth membranous septum, into which the chordæ tendineæ were inserted. There was no sign of endocarditis. The septum ventriculorum was patent and the foramen ovale open.

In my own case † there was not a suspicion of a valve.

In Abercombie's ‡ case from an infant aged 5 months the tricuspid orifice was the size of a hemp-seed, and completely obliterated by a fleshy mass.

In a case recorded by Crocker § in a boy, aged 7 months, whose pulmonary artery was narrowed by adherent valves, the right ventricle was rudimentary and the tricuspid valve was absent. The pulmonary artery was $\frac{1}{4}$ in. in diameter and very thin walled, and bifurcated in the usual manner. The ductus arteriosus was closed. A perforated septum ventriculorum, the size of a quill, led to the rudimentary right ventricle. The foramen ovale was widely open and divided into two by a thin cord of membrane.

Tricuspid stenosis in association with disease of the pulmonary valves is occasionally seen. In Osler's || case in a child, aged 4 months, the valve was thick, and thick-rimmed, the orifice admitting the tip of the little finger. The pulmonary valve was thickened and its cusps fused. The septum ventriculorum was complete, and the foramen ovale open. Recent vegetations were present on the tricuspid valve.

* 'Reports of The Society for the Study of Disease in Children,' vol. v, p. 47.

† *Loc. cit.*

‡ 'Path. Soc. Trans.,' 1883, vol. xxxv, p. 78.

§ 'Path. Soc. Trans.,' 1879, vol. xxx, p. 276.

|| 'Cyclopædia of the Disease of Children' (Keating), vol. ii, part ii, p. 756 (illustrated).

According to Maude Abbott * there are only four cases recorded of primary congenital tricuspid stenosis unassociated with pulmonary disease, viz. by Peacock, Romberg, Kucher, and Stow.

In Brindeau's† case of *tricuspid insufficiency* the infant's face was deeply cyanotic at birth, and associated with this were two pulsating swellings in the submaxillary region. Auscultation disclosed a bruit synchronous with the cardiac systole. The child lived only a few hours after birth. The heart was greatly enlarged, principally at the expense of the right side, and almost entirely filled the thoracic cavity. Puncture of the right auricle permitted the escape of a large quantity of blood with the disappearance of the tumour upon either side of the face. The jugular vein formed the facial swelling. The wall of the auricle was thinned, but that of the ventricle was thickened, exceeding even the thickness of the left ventricle. The tricuspid orifice was greatly dilated, permitting the introduction of the whole hand. The valve leaflets were thickened, shortened, and incompetent. The pulmonary orifice displayed no abnormality. The orifice of the superior vena cava was enlarged, that of the inferior was normal in size. *The foramen ovale was closed.* The ductus arteriosus was obliterated. The left side of the heart presented no abnormality. Histological examination of the tricuspid valve disclosed a round-cell infiltration in process of fibrous transformation, but without the presence of micro-organisms. In Zariquey's case an infant, dead at the age of 11 months with right-sided ventricular hypertrophy, there was tricuspid and pulmonary obstruction and insufficiency. Railton has also reported the case of a boy who died of tricuspid insufficiency at the age of 4 years, and presented, in addition to a deficiency of the interventricular septum and right-sided hypertrophy of the heart, old tricuspid valvulitis, which was believed to be of prenatal origin, together with recent endocarditis, which was assumed to be a continuation of the original process.

In John Thomson's case,‡ a child, aged 20 months, with congenital ptosis, the internal cusp of the tricuspid valve was shrivelled and glued down over, and almost closed what would have otherwise been a large opening in the interventricular septum. This opening was represented only by a small tortuous sinus, admitting a No. 7 catheter.

Mitral atresia is very rare. Cases have been recorded by

* 'System of Medicine' (Osler and McCrae), vol. iv, p. 390.

† "Intra-uterine Fœtal Endocarditis," 'Pediatrics,' vol. ii, p. 93.

‡ "Tricuspid Incompetence," 'Edinburgh Hospital Reports,' vol. ii, pp. 292-294.

Rokitansky, Thérémín, and by Lawrence and Nabarro,* and in each instance the condition has been associated with somatic abnormalities.

A specimen of *congenital mitral stenosis* was exhibited at the Society for the Study of Disease in Children by Fisher† in 1901. It was taken from a child aged 15 months. The mitral valve was not more than $\frac{1}{10}$ in. across. The stenosis was of a double character—a perforated diaphragm attached to the upper part of the auricular surface of the mitral valve segments, and below the diaphragm the mitral segments and the chordæ tendineæ were much thickened and contracted.

In Carmichael's case,‡ which occurred in a child, aged 3 years, "the mitral orifice showed a very high degree of stenosis, the chordæ tendineæ being so fused as to leave only three minute orifices, each not more than $\frac{1}{8\frac{1}{2}}$ in. in diameter, the only channels for the blood to pass into the ventricle." Associated with this was a short patent ductus arteriosus, $\frac{1}{8}$ in. in diameter. In Nash's§ case, a girl, aged 6 months, the valve was much thickened and diminished in size, and in a case reported by Simmons in a child, aged 19 months, the symptoms had existed since birth.

In Ayrolle's|| case, which died ten days after birth, there was marked stenosis and also numerous endocarditic vegetations.

In a case reported to the Philadelphia Pediatric Society by Roger and Wilson¶ in a boy, aged $6\frac{1}{2}$ years, the left auriculo-ventricular orifice was rudimentary, a small slit-like opening connecting it with the left ventricle. The pulmonary artery showed moderate stenosis, its orifice being entirely muscular. There was complete transposition of the viscera and a variety of mixed transpositions in the heart.

Of *mitral insufficiency* Cantley** has afforded an example in a girl, aged 22 months. The mitral valve was represented by thickened, shrunken, fibrous masses of horse-shoe shape.

In Steffen's case in a boy, aged $10\frac{1}{2}$ months, quoted by Mande Abbott,†† there were no tricuspid segments, but the valve formed a

* 'Journal of Anatomy and Physiology,' 1901-02, p. 62.

† "Congenital Mitral Stenosis in a Child aged 15 Months," 'Reports of The Society for the Study of Disease in Children,' vol. ii, p. 13.

‡ 'Edinburgh Hospital Reports,' vol. ii, pp. 298-303.

§ *Loc. cit.*

|| 'Rév. Mens. des Mal. de l'Enf.,' 1885.

¶ BRITISH JOURNAL OF CHILDREN'S DISEASES, vol. v, p. 176.

** 'Reports of The Society for the Study of Disease in Children,' vol. ii, p. 261.

†† *Loc. cit.*, p. 393.

low ridge, which was thickened, reddened, and slightly jagged. The *mitral cusps* were similarly thickened and reddened, and one of them was reduced to a narrow ridge.

In Fisher's case of mitral stenosis the bruit was systolic, and in Carmichael's there was no bruit.

In Cantley's case of mitral insufficiency the physical signs were those of mitral regurgitation.

Hypertrophy of the Heart.

Hypertrophy of the heart undoubtedly arises as an idiopathic disease of congenital origin. Simmons was the first to record a case of its existence at birth. He found the heart of a newly born child, who died during the labour, to be enlarged to twice its natural size, all other organs of the body being quite healthy. Prior to that Hauser* had recorded a case in a baby, aged 11 months, in which the heart was enormously dilated, with hypertrophied right and left ventricles. Virchow suggested that the hypertrophy might be congenital. In the same year Wayland Chaffey,† of Brighton, recorded a case in a girl, aged 3 years. The heart was enlarged to three times the natural size, the left side suffering the most. The child developed tricuspid incompetence from right-sided dilatation, accompanied by the usual associations. Chaffey refers to a similar case recorded by Hyde Salter‡ in 1866, in a sailor, aged 35 years, which appears to be the first case recorded, and some thirty years prior to Hauser's case and to Virchow's observations. This patient had enjoyed unbroken health up to eighteen months previous, when he had an attack of rheumatic fever, and during this attack he suffered for the first time in his life from great palpitation, præcordial pain, and dyspnœa.

The Naturalists' Society in Stuttgart possess a collection of preparations by Oberdörfer, which shows that muscular hypertrophy for which none of the usual causes are found are not very rare. There are six cases in early childhood which show an enormous hypertrophy of the heart-muscle. This observation is quoted from Bahrdt§ who exhibited a case of enlargement of the heart in infancy, which he attributed to primary hypertrophy of that organ.

* 'Allg. med. Centralztg.,' 1896, lxx, 615.

† "A Case of Cardiac Hypertrophy, probably Idiopathic," 'Pediatrics,' vol. i, p. 105, February, 1896.

‡ 'Brit. Med. Journ.,' July the 28th, 1866.

§ 'Berl. klin. Woch.,' in 45 'Gesellschaft der charite Aertze.'

In a case recorded by Kalb* in an infant, aged 6 months, there was a large thymus and sudden death. Hochsinger† has found by X-ray photographs hypertrophy of the heart and enlarged thymus combined, and gives a reproduction of the appearances.

Examples of gross enlargement of the heart are also reported in association with other cardiac irregularities, which are not readily explainable from the point of view of the lesions. Thus in a case reported by W. B. Hadden in a girl, aged 4 months, ‡ the heart was nearly five times the normal amount (weight 4 ozs.). The pulmonary artery was large, the aorta was inversely small. There was an imperfect ventricular septum.

Clinically, children with bullock's heart are apt to develop an intense anæmia, and finally succumb to failure of the right heart with the usual symptoms. Pallor and restlessless are suggestive of the condition.

Cardiac Displacements.

Cardiac displacements such as *dextrocardia* and *mesocardia* are the only congenital malpositions that are of interest to the physician and therefore that need be reviewed. Dextrocardia accompanied by transpositions of the viscera is commonly viewed rather as a rare developmental freak than recognised, as should be the case, as a not very out-of-the-way clinical experience. It sometimes happens in association with somatic deformities such as hare-lip and cleft palate, § or the condition may be combined with complete transposition of the cardiac cavities || and their respective vessels as in a specimen exhibited by me in May last at the meeting of the Children's Section. This child showed internal developmental defects in the form of a unilateral kidney and a cyst in the tongue. There may be complete transposition of the viscera without displacement of the heart, and that organ, though not misplaced, may be badly malformed as in Roger and Wilson's case ¶ shown to the Philadelphia Pediatric Society. Crozer Griffith, in the discussion

* 'Munich Thesis,' 1906.

† Pfaundler and Schlossman, 'Diseases of Children,' vol. iii, p. 458, Shaw and La Pétra.

‡ 'Path. Soc. Trans.,' 1882, vol. xxxiii, p. 50.

§ "Transposition of the Viscera in a Boy with Hare-lip and Cleft Palate," by J. G. Buchanan, 'M. and S. Rep.,' 1896, lxxiv, 188; 'Pediatrics,' vol. i, p. 329.

|| "Congenital Morbus Cordis; Complete Transposition; Transposition of Liver, Spleen, and Large Intestine; Cyst in Tongue; Solitary Kidney." 'Proc. Roy. Soc. Med.,' vol. ii, p. 233. Section for the Study of Disease in Children.

¶ "Philadelphia Pediatric Society," BRITISH JOURNAL OF CHILDREN'S DISEASES, vol. v, pp. 176-7.

that followed, said he had seen two cases resembling it both of which came to autopsy.

It certainly must be borne in mind that there may be developmental errors in the heart when dextrocardia is associated with transposition of the viscera, although some books state that the condition is of no clinical importance.

Evidence has also been produced at the meetings of the Society for the Study of Disease in Children that this teaching requires modification. Hawthorne* exhibited a lad, aged 14 years, with a dextrocardia confined to the heart, over which was to be heard a systolic bruit situate at the region of the impulse—the presumed mitral area—and a double bruit over the presumed aortic orifice. Whipham† also exhibited a girl, aged 8 years, with transposition of the liver and spleen and dextrocardia, over whose heart could be heard a systolic bruit at the apex and a duplicated sound at the base. Langmead‡ stated at the meeting at which this case was shown that at two autopsies the heart was found to be on the right side in each and the presence of acquired endocarditis was demonstrated. Presumably the viscera were also transposed, though the state of the organs was not specifically mentioned by him. The possibility that such displaced hearts may be more vulnerable to endocarditis than hearts in a normal situation has to be thought of as well as the possibility of associated developmental cardiac error.

Dextrocardia without associated transposition of the viscera is rare, and not only is it rare, but it must be viewed with suspicion because the diagnosis of congenital dextrocardia has been made on some few occasions, and this opinion has not been confirmed by autopsy. Maude Abbott§ quotes Kriezer's collection of fourteen cases of congenital dextrocardia, from the literature in nine of which there were autopsies. Of these nine there were three correctly diagnosed, and of the three, in one there was transposition of the great vessels and cavities. I have myself seen two examples of dextrocardia without associated transposition of viscera. In one, a child,|| aged 5 months, the condition was combined with congenital

* 'Reports of the Society for the Study of Disease in Children,' vol. vii, p. 187.

† 'Proc. Roy. Soc. Med.,' vol. ii, No. 6, p. 169. Section for the Study of Disease in Children.

‡ *Ibid.*, vol. ii, p. 170.

§ Osler and McCrae, "Congenital Cardiac Disease," 'Syst. of Med.,' Chap. IX, vol. iv, p. 345.

|| "Curious Congenital Cysts of the Lung associated with Dextrocardia caused by Pressure from the Cystic Lung," 'Reports of the Society for the Study of Disease in Children,' vol. iv, pp. 96-99, with illustrations.

cystic disease of the right lung, and this appears to have been the case in two of Krieger's collection. My other case is still alive, a girl, aged 5 years. As far as can be determined this condition of dextrocardia is the sole developmental abnormality. The heart-sounds are normal. There are a few moist sounds in the lung on the right side.

Sometimes the position of the foetal heart in the centre of the thorax is maintained, giving rise to the condition known as *mesocardia*. The apex-beat will then be felt in the epigastrium, and the position of the organ will readily be demonstrated by the X rays.

In conclusion, gentlemen, pray permit me to express to you my appreciation of your very kind attention. I have, as you have heard, made this lecture as far as possible a record of my clinical and pathological experiences, and I have freely availed myself of the recent writings and the clinical contributions of others on the topic of congenital heart affections, all of which have been duly acknowledged, so as to bring the subject up to date in all important items. I have purposely omitted all reference to treatment, because that in no sense differs from that which is considered appropriate in acquired maladies of the heart. The question is often asked by parents in these cases, "How long will the child live?" Before we can foretell what will happen we must first ascertain what is wrong with the organ. My efforts have therefore intentionally been directed rather to this side of the subject than to the remedial aspect, and with what measure of success must be left to your judgment. It remains for you to fill up in the future any clinical gaps that you may have observed, and of which I am fully conscious, in the diagnostic problems which have been presented to you.

SOME REMARKS ON THE DIAGNOSIS OF CHRONIC PULMONARY TUBERCULOSIS IN SCHOOL CHILDREN.

By JOHN ALLAN, M.D.

THE frequency of chronic pulmonary tuberculosis in children has recently given rise to much controversy, and the opinions expressed have been conflicting and the statistics put forward have shown wide differences. The figures given recently by the majority of observers would seem to prove that in school children the incidence of pulmonary tuberculosis of the adult type is not very

great. Dr. Mary Hamilton Williams (1), however, found 15·4 per cent. of school children in Worcestershire affected with chronic pulmonary tuberculosis, and she believes that it is one of the commonest diseases of childhood. Her statements have been adversely criticised by Fisher (2), Carr (3) and Sawyer (4), and certainly the figures given by many other observers are relatively so small as to make the figures of Dr. Mary Williams very conspicuous. It is interesting to note that Dr. B. Addenbrooke (5), of Kidderminster, has related that in three cases diagnosed as pulmonary tuberculosis by Dr. Williams he failed to find evidence of this disease. I was resident at Kidderminster for nine months and I was struck at the time by the singular freedom (I might almost say immunity) of the children there from phthisis. In looking over my notes I find that of 120 children of school ages treated as in-patients not one had phthisis, and of a large number of children treated in the out-patient department I do not recollect seeing a case in which the diagnosis of pulmonary tuberculosis was made, and I only remember one where there was any suggestion of tuberculosis of the lungs.

Horton and Lecky (6), in examining 806 school children at Brighton, found phthisis present in three cases, or ·37 per cent. They epitomise in the form of a table the results of a number of observations carried out during the previous four or five years. The highest percentage (2·3) was obtained by McKenzie in Edinburgh, while Low of Dundee and Ash of Dumfermline did not diagnose phthisis in any of the children examined. It is worthy of remark that in practically all places the percentage of children suffering from other lung diseases (mainly bronchitis) was high. Low found 12·1 per cent. of the children examined (517) so affected.

Sawyer (7) has quoted the percentages given by several medical officers in the reports to their respective education authorities. They vary from ·13 per cent. in Dumfermline to 1·6 per cent. in Wrexham. Of children who had been specially referred for examination 2·3 per cent. were found to be the subjects of pulmonary tuberculosis in Oldham, while in Blackburn 6·2 per cent. were considered phthisical. Meikle (8), in the examination of 3548 newly enrolled pupils in Edinburgh schools found phthisis in only two. Sawyer (7), from an analysis of 8000 children diagnosed ·19 per cent. as suffering from pulmonary tuberculosis of the adult type and ·14 per cent. as being doubtful cases of pulmonary tuberculosis of the adult type. He states: "Of the 15 children in whom a diagnosis of phthisis was made 4 have already become quite well again, so that it may be fairly presumed that the lung affection was not of

tuberculous origin." I am not quite clear as to what is meant. Does he mean that any lung condition (labelled "query early consumption?") which becomes cured by treatment cannot possibly be tuberculous, or in other words that tuberculosis of the lungs in children is incurable? That would be a perfectly legitimate inference, but in my opinion it would be quite an erroneous verdict in point of fact and one which is not borne out by clinical evidence. There is nothing to justify such a pessimistic view. Kelynack (9) writes as follows: "It has been commonly stated that pulmonary tuberculosis is infrequent in children, and when it occurs it almost invariably runs an unfavourable course. Both these statements are clinical inexactitudes."

During a term of fourteen months' residence at the Royal Alexander Hospital for Sick Children, Brighton, 954 children came under my notice as in-patients, and of these about 600 between the ages of four and twelve. Of that number two were diagnosed as suffering from chronic phthisis, while there were six cases which were considered doubtful. As regards the out-patients, of about 3000 children between the ages of four and fourteen treated during that period only four had chronic phthisis, while about 20 were under observation as doubtful cases.

Dr. Mary Williams has the support of some authorities in her high estimate. Grancher (10) found 1 in 500 affected with "open" tuberculosis of the lungs, and 11 to 14 per cent. of boys, and 17 to 20 per cent. of girls suffering from "closed" pulmonary phthisis. Floyd and Bowditch (11), from the examination of between 600 and 700 tuberculous children, found that in all but two cases the disease appeared as the adult type or chronic phthisis. Yongg (12) has expressed the opinion that chronic fibro-caseous tuberculosis of the lungs is extremely rare under the age of four years, but is the usual form in later life. Holt (13) also maintains that chronic phthisis is very rarely seen before the fifth year, and that it is not at all frequent until the tenth or twelfth year, from which it is evident that he believes that in later childhood this type may be frequently encountered. Newsholme, at the Second International Congress on School Hygiene (1907), expressed the opinion that latent tuberculosis was very common in children.

Sawyer (7) has supported his theory from evidence gained at autopsies. He discovered in the course of 244 post-mortems in children under 15 years of age only two cases in which there was a condition at all comparable with the chronic phthisis of adults. From which he concludes that this type of phthisis is a rare disease

in childhood. It is a well-known fact that men who have opportunities to make large numbers of autopsies frequently discover the healed lesions of tuberculosis in the lungs of persons (children as well as adults) who have succumbed to other diseases. From which one may infer that pulmonary tuberculosis is frequently curable, and that if it were recognised in its earlier stages one might hope to get a better percentage of cures than one does at the present time. Squire (14) says that the large number of cases of children dying from other causes in which scars of old and healed tuberculosis are found in the lungs shows that recovery frequently takes place. Such a statement, coming as it does from one whose experience in this branch of work is very considerable, should carry weight. As regards such healed lesions discovered post mortem, surely it is reasonable to conclude that in the majority of cases the children during life had had chronic phthisis. Clinical experience proves that acute phthisis is a dangerous and fatal disease, and I cannot believe that healed lesions found after death have resulted from acute pulmonary tuberculosis (especially in children) in many cases.

Probably the great difficulty in arriving at the diagnosis of pulmonary phthisis among school children is the fact that many chronic lung conditions simulate it. There is also no standard of symptoms and physical signs on which the diagnosis of phthisis in children can be based. Different observers arrive at their conclusions by different methods, and until there is more uniformity one cannot hope to obtain statistics which are comparable. The diagnosis of pulmonary consumption is often made on quite insufficient evidence, such as the association of chronic cough with wasting, night-sweats, etc. Even cases where suggestive signs can be made out often clear up completely. Young (12), from the analysis of the records of 337 cases of children under the age of fifteen, the majority being between seven and fourteen, brought to his out-patient department at the Brompton Hospital for cough, expectoration and wasting, found only 45 showing definite signs of tuberculous disease of the lungs, in only a small number of which was the diagnosis confirmed by examination of the sputum. Fisher (15), Riviere (16), and Maxwell Telling (17) have discussed certain forms of chronic lung diseases in children, diseases which might possibly be mistaken for chronic tuberculosis.

As Dr. Mary Williams is apparently the person who has found the highest percentage of cases of pulmonary tuberculosis among school children, it may be well to examine the data on which her contentions are based. The standard on which she bases her

diagnosis will probably be objected to by many, and by the adoption of this standard she probably includes many cases which would be excluded by others who adopt a more rigid standard. When one comes to consider the matter it must be admitted that it is not only those cases in which the lung substance is broken down and tubercle bacilli are being freely expectorated that one wishes to detect, but it is also most important that those cases which are, so to speak, on the border-line should be recognised. Cases in the former group not only play a vital part in the spread of the disease, but are also unsatisfactory from a therapeutic point of view. The cases in the second group are less likely to act as sources of infection, and they are cases which one may hope to cure by appropriate treatment.

The early signs and symptoms on which Dr. Mary Williams (1) relies are as follows: The three symptoms which she believes of most importance are night-sweating (with certain qualifications), morning anorexia and fatigue. She finds that the children tire easily. They may forget the tiredness in excitement, but if so they collapse afterwards. Many of her cases reach home from school so tired that they promptly fall asleep. The other symptoms mentioned by her are that the children with early phthisis are constantly catching cold, have headaches, etc. Cough is a matter of chance, the majority of cases do not cough in the daytime, hence are not dangerous to others. One symptom which can only be discovered in a fairly intelligent child is pain—pain quite apart from pleurisy, occurring early, over a small lung area. It is a feeling of soreness and appears to indicate inflammation commencing in a new focus. Loss of weight is most important. The children suspected of phthisis are being weighed monthly. She often finds a rise of temperature, even in the morning, but not in fibroid cases. *Auscultatory*: The chief point that she generally tries to make out is whether there is any area which sounds unlike the rest, and her difficulty has been with the right apex, as it is not easy to determine slight variations from the normal at this spot. She has failed to feel any certainty about any change in the character of the inspiration as indication of a tuberculous focus, this being a point on which Grancher laid much stress. She points out that two of the doctors who carried out part of the special work in the London schools speak of certain changes they find as indicating an atelectatic condition of lung, these changes being patchy dulness, tubular breathing and crepitations. I am inclined to agree with her in her assertion that such a condition does not exist beyond infancy, except as a pathological curiosity, and I consider that these physical signs taken along with

the general symptoms mentioned above indicate the probability of pulmonary phthisis. Dr. Williams remarks that it is common to hear that such and such a sign, such as crepitations at one apex, have no significance, because on the next examination they have cleared up, and she says that if there is one thing certain about crepitations due to early phthisis it is that they may be present one day and not a week later.

The various points mentioned by Dr. Williams as aids to the diagnosis of phthisis in school children have been given fairly fully, so that one may form a just estimate of the value of the statistics she gives. In my opinion these signs and symptoms are not as a rule sufficient for one to make a positive diagnosis of phthisis in children. Doubtless some of the children presenting this train of symptoms may be suffering from phthisis, but to come to this conclusion on the strength of one examination will certainly give a false estimate of the frequency of the disease among school children. To diagnose early pulmonary phthisis in the examination suggested by the Board of Education is a matter of extreme difficulty, if it is not an absolute impossibility. If the medical inspection of school children is to be of any value then more efficient inspection will have to be enforced, and some such scheme as that outlined and so ably expounded by Dr. George Carpenter (18) must be adopted. It is nonsense to say that efficient examination can be made by simply loosening the clothes, so that only a small part of the chest is available for auscultation, etc. Early cases will be missed, and thus those cases which offer the best field for effecting a cure will remain untreated; or the diagnosis will be come to on insufficient data and thus too high an estimate of the frequency of the condition will be formed, and some parents may be unnecessarily alarmed through a mistaken diagnosis having been made.

I believe Dr. Williams makes a fundamental error when she asserts, "I believe that a chronic non-tuberculous bronchitis is rare between the ages of five and fifty, unless due to heart disease, Bright's disease, or some other definite pathological entity, and is extremely rare in comparison with phthisis." In the out-patient department of a children's hospital many of the children who attend for treatment suffer from chronic bronchitis, which in the majority of cases is non-tuberculous in nature. This chronic bronchitis is not transient, lasting for a few weeks, but persists for months or even for years. In many cases it is intermittent, and there is a disease which can best be described as periodic bronchitis in children. In a short article elsewhere (19) I have drawn

attention to some of the points in connection with this condition. While in the majority of cases the general symptoms may not be severe, in a few there is considerable wasting, and there may be anæmia, night-sweats, slight evening rise of temperature, etc. Dr. Newsholme, formerly medical officer of health for Brighton, used to impress on his workers in dispensary and hospital practice the importance of having the sputum of "chronic bronchitics" tested for tubercle bacilli, and I know for a fact that in one or two cases in adults where the symptoms merely pointed to persistent chronic bronchitis tubercle bacilli were found in the sputum. In a few of my cases of children with chronic bronchitis associated with symptoms suggestive of tuberculosis the sputum was examined, but always with negative results.

In a large number of those children who suffer from periodic bronchitis there are enlarged tonsils and adenoids, and this leads to the statement that in a debilitated child who has hypertrophied tonsils and adenoid vegetations the train of symptoms exhibited is often such that phthisis is suspected. The symptoms may include a hacking cough, mucous or muco-purulent expectoration, lack of appetite, a marked degree of malnutrition, loss of flesh and strength, failure of growth, etc., and at one or both apices there may be slight dulness on percussion, bronchial breathing, and occasional crepitations. The removal of such enlarged tonsils and adenoids often acts like a charm and the improvement in general health and nutrition soon allays any fear there may have been that the child was the subject of phthisis. It seems not improbable that the presence of hypertrophied tonsils and adenoids is a source of weakness to the child, and as such may be an important ætiological factor. In children at or about puberty it must not be forgotten that other local conditions, such as atrophic rhinitis, "latent empyemata" of the accessory sinuses, etc., may cause much ill-health, and loss of weight and strength, accompanied by cough, sweating, swinging temperature. On treatment of the local cause all the symptoms disappear.

Another condition which must be kept in mind as it may be occasionally met with is post-influenzal in nature. It sometimes happens that after an attack of influenza which may or may not have been accompanied by symptoms of pneumonia there remains apical consolidation with well-marked signs, associated with loss of weight, nocturnal temperature, sweating, etc. I have met with two cases of this nature in children, but both slowly cleared up under dietetic and general tonic treatment. In his letter of criticism of

Dr. Williams' paper Dr. Fisher (2) mentions that recurrent fever is an ailment in children which may be commonly met with, and which may cause symptoms of ill-health that may suggest tuberculosis to the uninitiated. He also remarks that the symptoms given by Dr. Williams may, broadly speaking, be said to be those of dyspeptic children, of children the subject of cyclical albuminuria or of children physiologically delicate—a statement which no one who has had anything to do with children's diseases will be prepared to deny. There are many other conditions which may simulate chronic phthisis in children, but it would take too long to consider each one separately. In the papers of Drs. Fisher (15), Riviere (16), and Maxwell Telling (17) many chronic lung affections in children (for example, dilatation of the bronchial tubes, pulmonary fibrosis, unresolved pneumonia, etc.) are discussed, and the discussion, indeed, covers practically all the chronic diseases of the lungs liable to be mistaken for phthisis.

In considering the diagnosis of chronic pulmonary phthisis in the child at school we are confronted with a problem which is difficult and requires much care. The signs and symptoms already enumerated are so general that it may be said that singly or collectively they may be due to tuberculosis, but in the majority of cases some other lung condition (or extra-pulmonary disease) will account for them. Cough is a symptom in children which may be due to many causes besides phthisis or other lung diseases, and it is one of the least important symptoms. The hard, hacking cough which is fairly characteristic of phthisis in the adult is by no means pathognomonic in the child. My experience has been that of children who attend the out-patient department of a hospital during the winter and spring months something like 50 per cent. are brought on account of cough, but only very occasionally is this cough due to real or doubtful pulmonary phthisis. Dr. Young (12) remarks that a cough associated with sickness or with expectoration in a child under the age of six who has not been taught to spit out should excite suspicion if whooping-cough and bronchiectasis can be excluded. Afternoon fever, shown by flushed face and tired feeling, is a fairly suggestive symptom, and should certainly make one examine most carefully all the systems for a possible explanation. In all my cases in children in which a diagnosis of revealed pulmonary tuberculosis (not including acute cases) was made this symptom was present in a marked degree, and in practically all the cases which were considered doubtful it was present to a less extent. In other cases where the symptoms, cough, loss of flesh and weight, anorexia, night-

sweats, dyspepsia, etc., might be regarded by some as due to tubercle, I have rarely found this symptom and then only in a very mild form. Pallor and anæmia practically always accompany phthisis, and these are not even mentioned by Dr. Williams. Marked anæmia in an emaciated child should direct one's attention to the possibility of phthisis, because in non-tuberculous lung conditions, though there may be pallor, it is nothing like so marked as in phthysical subjects. It may be incidentally mentioned that in the acute cases the anæmia is made all the more conspicuous by reason of the hectic malar flushes. Loss of weight is undoubtedly a symptom of phthisis, but it is also a symptom of many other conditions. Dr. Williams mentions the fact that the children examined by her and who are suspected of being phthysical are being weighed monthly. This is one of the most practical suggestions in her paper. A child who is being treated as tuberculous and whose weight steadily falls, or even remains stationary, may be regarded as in all probability the subject of phthisis. In none of the other conditions (except in very exceptional cases) will the weight fail to increase with treatment. Loss of weight under such circumstances may be taken as a symptom affording confirmatory evidence. Dr. Williams mentions pain as an early symptom. I do not know what has been the experience of others in this country with regard to this symptom, but I have made no note of it in my cases in children and I do not recollect having observed it, although I have several times met with it in adult cases. Francke (20) believes in pressure pain as a symptom of beginning consumption, and he lays special stress on the value of testing for pathological pain pressure areas. The other symptoms that may be met with are of little value. Night-sweating, if it be considered at all, must be qualified in some such manner as suggested by Dr. Williams. Dyspepsia, anorexia, etc., are more often symptoms of other conditions. Expectoration is not usual in the young child and the sputum is difficult to obtain. If obtainable it is seldom characteristic, and if characteristic the case is not necessarily one of phthisis, because I have seen typical nummular sputum in lung conditions other than phthisis—for example, unresolved pneumonia. The characteristic sputum, too, would rather indicate an advanced case.

With regard to physical signs these are most variable in children. Calmette (21) has great faith in Grancher's phenomenon, which is asymmetry of inspiration. The least difference in the vesicular inspiration of the two sides, especially above and immediately below the clavicle, indicates a change in the side in which the sounds are

harsher, weaker or less vesicular. I am quite prepared to admit that this sign may be of value in the adult, but in the child it is of little use. The so-called puerile breathing is common enough in children, and there may be differences in the character and intensity of the breath-sounds in perfectly healthy children. Impairment of the percussion note cannot be taken as a pathognomonic sign in the child. There may be slight diminution in clearness and duration of the percussion note or slight increase in resistance to the finger in children who are merely suffering from enlarged tonsils and adenoids. Philip (22) has drawn attention to what he has termed *tidal percussion*, which consists essentially in the practice of percussion alternately during expiration and full inspiration. The same observer also recommends a *special line of percussion* for the determination of slight degrees of apical dullness. There may be slight increase of the tactile and vocal vibration; any marked increase in the vocal resonance, especially pectoriloquy associated with amphoric breathing, points to cavity formation, which indicates a more advanced stage of the disease. There may be depression or flattening in the region of one or other clavicle or supra-spinous fossa and the chest expansion may be deficient. The adventitious sounds may be scanty or absent, but sometimes crepitant or gurgling râles are to be heard. Latham (23) believes that for all practical purposes we must diagnose pulmonary tuberculosis when we find diminished resonance and increased resistance to the finger associated with the presence of persistent crepitations or fine râles in those situations in which tubercle usually begins, *i. e.* in the apices of the lungs, more especially towards their posterior aspect. He is very insistent about the adventitious sounds being persistent. He writes: "It is not uncommon to see patients, especially children, in whom some pulmonary lesion has been followed by a localised emphysema at one or other apex, together with the formation of adhesions. In such cases we may have retraction of the supra-clavicular or supra-spinous fossa, with impaired resonance and diminished entry of air. These cases simulate tuberculosis very closely, but any adventitious sounds which may be present clear up when the patient coughs or breathes deeply—in other words they are not persistent." No doubt that may be true enough, but crepitations need not be present day after day, week after week before one can diagnose phthisis. A diagnosis of phthisis may be perfectly justified, although the crepitations may be intermittent, *i. e.* present one week but absent the next. The association of the physical signs, dullness on percussion, bronchial breathing, and intermittent crepitations in an emaciated child who

is markedly anæmic will generally justify a diagnosis of pulmonary tuberculosis. In arriving at a diagnosis the physical signs must be taken along with the general symptoms and all should be carefully analysed. There is no single sign in the child from which one can at once diagnose phthisis; it is only from a careful consideration of the train of symptoms presented and the physical signs found that an approximation to the truth can be arrived at. On no account should a record of the family history regarding tuberculosis be omitted.

The conclusion to be come to with regard to chronic phthisis in children is that this condition cannot be with certainty diagnosed in the course of the medical inspection of school children. All that can be said is that suspicious cases may be found, and these should be referred to the family medical attendant or to the local hospital for further examination, observation and treatment. These doubtful cases certainly require supervision and treatment, and all the more so as many of them are on the border-line, and by appropriate measures early phthisis can be cured or phthisis may be prevented. Many of these cases may be described as "preventorium" cases, a term which includes cases of children who are physiologically delicate, and who are suspected of being phthisical, although a definite diagnosis cannot be made. Ewart (24), in a short, able article, has made a strong appeal for the recognition and for the supervision of such cases. With the greater facilities afforded for better diagnosis by frequent examinations a more correct decision may be come to, and, moreover, further aids can be sought to assist in the elucidation of the case.

If any sputum can be obtained it should certainly be examined frequently for the presence of tubercle bacilli. It is well known that until the child reaches the age of seven or eight he does not expectorate naturally, but he swallows his sputum. Every endeavour should be made to break the child of this habit, which is fraught with grave danger, the child being liable to secondary alimentary infection if sputum containing tubercle bacilli is swallowed. The isolation of the bacilli from the alvine discharges may be tried, and Rosenberger (25) has succeeded in this in a few cases of patients suffering from "open" tuberculosis. He believes that it will afford evidence of diagnostic value in patients suffering from chronic cough without expectoration, phthisis being suspected. Serio-basile (26) and Solis-Cohen (27) have also obtained positive results. Attempts have been made to detect tubercle bacilli in a swab taken from the larynx, but not with very successful results.

The saliva should also be examined for tubercle bacilli, as Neild and Dunkley (28) have recently demonstrated their presence in that medium. A method advocated by Blume (29) may also be tried in the case of an intelligent child. It is a suitable measure for endeavouring to get sputum from a patient who coughs, but who does not, or cannot, expectorate any real sputum. The child is given a piece of clean glass—a clean microscopic slide will do—and told to hold it in front of his mouth when he coughs. This may be coughed on for several days if necessary, and the specimen is then fixed and stained for tubercle bacilli in the usual way. The detection of tubercle bacilli is a certain diagnostic. Latham (23) says: "Where tubercle bacilli are present in the expectoration or saliva, no matter what symptoms may be present, no matter what physical signs may be found we must make a positive diagnosis of pulmonary consumption." The possible presence of a localised tuberculous ulceration (*e. g.* of gum, buccal mucous membrane, etc.) must not be forgotten, and the occasional but very rare existence of non-tuberculous gangrene of the lung in which an acid-fast bacillus similar to the tubercle bacillus is found must be kept in mind.

There are many aids that may be employed to assist in the diagnosis of tuberculosis. Among others may be mentioned Calmette's ophthalmic reaction and von Pirquet's cutaneous reaction. Both these methods have been largely tried during the last few years, and the consensus of opinion seems to be that they are of undoubted value. The former, while more reliable, is not free from danger, and many practitioners now prefer to use the cutaneous reaction in the first place. Of more elaborate methods, we have subcutaneous injections of tuberculin controlled by the opsonic index estimation. Again, the blood may be examined for eosinophile cells, which are said to be absent in early tuberculosis. Rosenberger (30) has recently drawn attention to the demonstration of tubercle bacilli in the blood. He believes that they are constantly present, and in 125 cases examined up to January the 15th, 1909, all were positive, *i. e.* the bacilli were found in the blood. He is also of opinion that the bacilli can be demonstrated in the blood before they appear in the sputum. In the X rays we have another useful diagnostic aid. Calmette (21) is sceptical of their value, but many observers in this country have demonstrated their utility. Lawson (31) has testified to their value in several interesting papers illustrated by photographs. Cunningham (32) is a strong advocate in favour of their use, and he believes that consumption can be thus

diagnosed before the stethoscope tells anything. The chest should be examined not only by means of the fluorescent screen but should also be photographed. By the former method the movement of the diaphragm, the degree of transillumination of the apices and any area of shadow present both in inspiration or expiration can be studied. In the case of a diseased lung the corresponding half of the diaphragm moves through a smaller excursion than the other; also a diseased apex will "light up" less well on deep inspiration than on the healthy side. Both these signs are met with in early cases. By means of the photograph we obtain impressions of very small areas of disease, too small to show on screen examination.

From the consideration of the above facts it will be evident that the diagnosis of early pulmonary consumption in children is a matter of great difficulty and that aids in diagnosis are necessary. It is not easy to understand how anyone can diagnose chronic pulmonary tuberculosis in the course of a ten minutes' examination of a child, when this examination is supposed to be a full medical report. In conclusion, it may be said that while it may not be possible to agree with Dr. Mary Williams in her conclusions one cannot but sympathise with her, actuated as she is by high ideals and by an earnest desire for the welfare of the future generation. It is difficult to get away from the idea that she has over-estimated the incidence of pulmonary tuberculosis among school children, although it may be that her estimate is as near the mark as that of those who believe that the incidence of the disease in children is extremely small. It seems certain that she has included many children who are physiologically delicate but who cannot be justifiably termed tuberculous. If the two groups were distinguished no objection could be made, for those delicate children certainly require medical supervision, as they are prone under adverse circumstances to become infected with tubercle. The whole subject is one of great complexity, and its study is not only interesting from a medical point of view but it is also of national importance, because these children represent the future citizens of the empire. To stamp out and vanish from our land this white plague of tuberculosis should be the constant aim of all, and an important step in the accomplishment of this ideal is the early recognition of the disease in children. Much can be and should be done, and it is to be hoped that the benefits accruing to the medical inspection of school children will be great, and that efficient inspection will help towards the emancipation of our race in diminishing the incidence of, or even freeing it from, this dreadful curse of consumption.

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GENETOUS TYPE OF IMBECILITY WITH SINGLE PTOSIS.

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MANY classifications of the various types of imbecility in children are recognised. Their differences are due to the different stand-points from which the cases are viewed. There is the clinical classification, as recommended by Dr. Hutchison, the pathological

one of Dr. Potts, while the ætiological standpoint is used by Dr. W. W. Ireland.

It is noteworthy that the various attempts to classify these cases of imbecility leave the largest group quite ill-defined. In fact, the type to which I refer depends for its existence on the absence of the characteristics of other well-defined groups, such as cretinism, mongolism, etc. The name even differs, for one must admit that



“genetous,” “unclassifiable,” and cases of “simple primary amentia,” though different in name are referable to similar cases. Within this group may be found cases ranging from idiocy to mere backwardness, from children who can neither walk nor talk to those who may possibly be able to earn a livelihood.

One of the signs which is recognised in connection with the more serious of these unclassifiable cases is double congenital ptosis. This is due, of course, to a deficiency in the third nerve or its nucleus. The lesion is only partial, and the other signs of paralysis of

the third nerve, such as diplopia and external strabismus, are not mentioned.

In a mentally deficient child it is reasonable that both halves of the brain should suffer. It is more uncommon and more difficult to imagine that the deficiency should be confined to one half. It was partly for this reason that I thought it worth while to report a case of "unclassifiable" or "genetous" imbecility with single congenital ptosis which lately came under my observation at the Children's Hospital, Temple Street, Dublin. The case has, however, many points of interest. It is worth recording if only for the consideration of the prognosis and family history.

The patient is a girl, aged 10 years. She is quiet and diffident. She has a pale, unhealthy colour, her left eyelid droops, and she shows that type of chest and face which is associated with the presence of adenoids. The expression is vacant. Her speech is jerky and indistinct.

The family history on the mother's side was extremely good. The father did not drink to excess. Both parents and the other children in the family were healthy. But all the near relations on the father's side drank excessively. The child's paternal grandmother was said to have "died of drink."

This fact I regard of importance. Dr. W. A. Potts,* in his recent ingenious and interesting articles in the *BRITISH JOURNAL OF CHILDREN'S DISEASES*, states, in referring to American statistics, "The close investigation of these records shows that often it is not drinking on the part of the parents but in an earlier generation that does the mischief."

Before discussing the prognosis I may briefly mention the stigmata of degeneration present in the case.

(1) Physical stigmata: Vacant expression, narrow forehead (not shown well in photo), Gothic palate, winged ears, with deficient helix.

(2) Physiological stigmata: Nocturnal enuresis to age of nine, faecal incontinence to age of seven, slow in learning to walk and talk (the mother mentioned these facts without being asked).

(3) Psychological stigmata: Body restless, rhythmic movement of hands. Cannot be taught to read, write, or sew; offers to "clean cups," and after cleaning one runs away. Loses temper easily; remembers what the rest of the family have forgotten; loves dirt and mud.

* "The Origin of the Feeble-minded," Dr. W. A. Potts, *BRITISH JOURNAL OF CHILDREN'S DISEASES*, April, 1909, p. 177.

The prognosis must now be considered. This girl, at the age of ten, can walk and talk. That is about all she can do. She is unable for any serious, bodily, or mental exertion. She has, unfortunately, a feeble mind in a feeble body. From the grosser defects of infancy she has emerged, but further progress is unlikely. It only remains now to answer two questions: Will she live long? Will she be able to earn her livelihood? The reply to both must be in the negative.

EPIDEMIC CEREBRO-SPINAL MENINGITIS IN PARIS— A REVIEW.

By J. D. ROLLESTON, M.A., M.D.Oxon.,
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THE recent epidemic of cerebro-spinal meningitis in Paris and the scattered outbreaks throughout the provinces, though they never assumed alarming proportions,* have been of sufficient importance to rouse considerable interest in the French medical world, as is shown by the numerous publications relating thereto. The predilection of the disease for children, which has been attributed by Chauffard to the relatively free communication existing at that age between the nasal fossæ and the meninges, has been well exemplified in this as in other epidemics; and it is from physicians attached to the children's hospitals, and especially from Dr. Netter of the Hôpital Trousseau, that the most instructive communications have emanated. The value of anti-meningococcic serum, to which American physicians have recently testified, has been unanimously confirmed in this epidemic. Under the new treatment not only has the mortality—which under previous methods ranged from 60 to 80 per cent.—fallen to under 20 per cent., but recovery has been rapid, and sequelæ have been comparatively rare. The mortality, though still high in infancy, has been reduced from 87·5 per cent. to 33·3 per cent. in children under one year. In serum-treated cases the number of sequelæ was only 2·85 per cent., of which otitis interna was the most frequent and serious, as compared with 23·5 per cent. in cases not so treated (1). Numerous brands of serum were employed, but those which yielded the best results were prepared by Flexner at the Rockefeller Institute in New York and by Dopfer at the

* Netter calculates that about three hundred cases have occurred in Paris between January and May of the present year, 'Bull. de l'Acad. de Méd.,' tome 61, 1909, p. 508.

Institut Pasteur in Paris. Dopter (2) has compiled statistics of 196 cases which have been treated with his serum in various parts of France since the beginning of 1909. The mortality was 15·86 per cent., which falls to 10·32 per cent. on subtracting the cases which were moribund when first treated, as well as those in which death was due to other causes than meningitis. In three kinds of cases he admits that the serum is of no avail—cases treated too late, septicæmic, or hypertoxic forms, and cases in which cerebral symptoms predominate. He has found that the intra-venous injection into horses of living cultures of the meningococcus has produced a more efficacious serum than that furnished by simultaneous injection of both the micro-organisms and their toxins, since the mortality of cases treated with serum prepared by the former method was 10·93 per cent., as contrasted with a mortality of 18·18 per cent. among cases treated with serum prepared by the latter method.

Netter treated fifty cases exclusively by Flexner's serum, with a mortality of 18 per cent., which falls to 8·89 per cent. on subtraction of the moribund cases and of those in whom death was due to other causes than meningitis (reduced mortality). The reduced mortality among the children under two years, who formed nearly a third of the total, was 15·4 per cent., and among the rest 5·8 per cent. The earlier the treatment is adopted the more likely it is to be successful; but that it may be of value even in late cases is shown by the fact that speedy recovery occurred in four of Netter's cases, which had first been injected on the sixteenth, twenty-fourth, twenty-fifth, and twenty-eighth days respectively (4). The method of administration is important. Subcutaneous injection is useless owing to the impermeability of the meninges, and should be abandoned. To be efficacious the serum should be injected into the spinal theca. In each case the injection should be preceded by lumbar puncture, and the amount of cerebro-spinal fluid withdrawn should equal or preferably exceed the amount of serum injected. Dopter (5) states that if this precaution be not taken signs of compression may result, as shown by severe headache, convulsions, and syncopal attacks. In some cases, however, in which repeated lumbar puncture may fail to remove any fluid, injection of serum is none the less urgent. It is, therefore, consoling to learn that both Netter (6) and Comby (7) have on several occasions injected serum after a "dry tap," with beneficial results. Netter (8) recommends the employment of comparatively large doses at a time—20 to 30 c.c. for children, and 30 to 45 c.c. for adults. According to the same authority the injection

should be repeated daily for three to four days in every case, at the end of which time not only is there an improvement in the general condition, but the cerebro-spinal fluid is clearer, the meningococci diminish in size and number, and lose their staining capacity and viability in cultures, while the leucocytes show less morbid change and tend to disappear. A high temperature by itself should not be regarded as an indication for fresh injections. Pyrexia and even temporary aggravation of the meningeal symptoms may be due to the serum, especially in cases of anaphylaxis (9). The possibility of such symptoms occurring is, of course, no contra-indication to the employment of anti-meningococcic serum any more than the possibility of anaphylaxis is to the administration of antitoxin in the treatment of diphtheria. The frequency and date of appearance of serum eruptions, usually of an urticarial type following intra-spinal injection, are just the same as with rashes following the subcutaneous method, as Netter (10) shows by comparing his figures with those given by Currie in the Glasgow epidemic. In addition to serotherapy, the frequent use of hot baths and the employment of collargol by inunction, subcutaneous or intra-muscular injection have been found of service by Netter (11). The application of leeches to the mastoids and ice to the head, with calomel and iodide of potassium internally, is recommended by Boinet (12). The administration of diphtheria antitoxin, advocated by some writers, is severely criticised by Netter, who has collected from literature all the cases so treated, among whom the mortality was over 80 per cent. (13). The experience furnished by the French epidemic has confirmed the prevailing doctrine that cerebro-spinal fever, though undoubtedly contagious, is much less so than the common eruptive fevers, including typhoid. The vitality of the meningococcus outside the human body is feeble, since it is soon destroyed by desiccation or mild disinfectants. In only twelve out of eighty-two cases investigated by Netter (14) was there a history of contagion. Everything tends to show that the disease is spread by healthy "carrier" cases. The prophylaxis of the disease therefore requires the isolation of carrier cases and the disinfection of their nasal cavities in which the meningococci lodge, for which purpose the insufflation of dried serum and spraying with pyocyanase are recommended. Carriers appear to be more frequent in the houses of the poor than in well-to-do families, and their rarity among the medical and nursing staffs of a well ventilated hospital is shown by the fact that Netter did not find a single case among the ten members of his staff. It is interesting to learn that the number of carriers who subsequently

develop the disease is small. Thus Vaillard (15) states that among seventy-four carriers examined and isolated during an epidemic at Evrenx only one case subsequently was attacked with meningitis, eleven days after he was isolated.

Several interesting papers have appeared on the changes of the cerebro-spinal fluid in the course of the disease. As is well known, the typical fluid of cerebro-spinal meningitis is turbid and its cellular contents consist almost exclusively of polymorphonuclear leucocytes. Netter and Debré (16), however, have shown that clear fluid, the cell contents of which are mainly mononuclears, may be met with both at the beginning and in the late stage of the disease. Similar evidence is given by Dopfer (17), who in four out of 145 specimens of cerebro-spinal fluid from cases of epidemic cerebro-spinal meningitis found an abundant or even exclusive lymphocytosis, and by Boinet (18), who describes a malignant form of rapid evolution in which the cerebro-spinal fluid is clear and rich in lymphocytes. It can readily be understood that such cases may be regarded as tuberculous meningitis, especially if no meningococci can be found in the fluid, and serum treatment be withheld to the detriment of the patient. For the recognition of the true nature of such cases Vincent (19) has introduced a method which he has denominated the precipito-reaction. The cerebro-spinal fluid of the suspected case is centrifugalised, and the clear supernatant fluid is poured into three tubes. To each of the first two a drop of anti-meningococcic serum is added, while the third tube serves as a control. The tubes are then hermetically sealed and placed in an incubator at 55° C. After eight hours, if the reaction is positive, a turbidity will be found in the first two tubes, owing to the precipitation of the soluble products of the meningococcus by the specific serum. Other observers (20) have confirmed the value of this reaction, which is of service for detecting not only cases of cerebro-spinal meningitis in an early stage but also those which run an abortive course throughout (21) as well as the fulminating cases already alluded to, described by Boinet. Associated forms of cerebro-spinal meningitis in which there is a simultaneous infection of the meninges by the tubercle bacillus and the meningococcus are stated by R. Debré (22), Netter's interne, to occur with special frequency in epidemic times. The existence of such forms, as Debré points out, can only be determined by bacteriological examination of the cerebro-spinal fluid.

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Hydronephrosis in a Child aged 3 years.—M. VILLEMIN related the case of a child with an abdominal tumour about three times the size of the fist. The quantity of urine passed was much below normal. Operation discovered a hydronephrosis of obscure ætiology. The incision made was not lumbar, but transperitoneal, which the author preferred as rendering the operation easier in so young a subject.

Auto-strangulation of Meckel's Diverticulum.—M. VILLEMIN gave notes of the case of a child, aged 4 years, brought to the hospital seriously ill with diffuse abdominal pain and contraction of the muscular wall, peritoneal facies and cold, blue extremities. The intestinal evacuations were normal. Pulse 120; temperature 38·4° C. A diagnosis of appendicitis was made in presence of these symptoms added to the rapidity of onset and greater pain at MacBurney's point. At the operation the appendix found normal; turbid fluid in the peritoneal cavity. Under the liver was a hard mass surrounded by intestinal folds, which proved to be Meckel's diverticulum.

Foreign Body in the Left Bronchus.—M. VILLEMIN related the case of a child who had swallowed a metal pencil case. Very little discomfort was experienced and respiration hardly interfered with. Radioscopy, however, showed an almost complete opacity of the whole of the left thorax. Attempts were made to extract the foreign body by use of bronchoscopy, but after repeated efforts it was found impossible to pass the glottis. Tracheotomy was then performed and an attempt made to reach the foreign body by means of direct illumination. This was also unsuccessful. A forceps was then passed into the orifice, and after a series of trials a metal pencil case 4 cm. long and 1 cm. thick was extracted. The author concludes from this case (1) that in young children superior bronchoscopy is very difficult while subglottic bronchoscopy is easy; (2) that the instrument which is passed into the bronchus should be fenestrated on one side so as to allow respiration on the opposite side; (3) that the older methods of using the forceps without the aid of direct illumination are in many cases very successful in facilitating the extraction of foreign bodies from the bronchi.

Scarlatina and Varicella.—M. NOBÉCOURT presented a series of cases of children suffering from scarlatina, and who contracted varicella between the fourth and twenty-eighth day. The cases showed that the incubation period of varicella was lengthened, that the disease was more severe, and that considerable cicatrisation followed the evolution of the papules. MM. Variot and Leroux had observed similar cases which terminated in death by hyperpyrexia.

Results of Ablation of the Thymus for Laryngeal Stridor.—M. VEAU showed two children on whom ablation of the thymus had been performed; in one the beneficial result was immediate and in the other no good result followed. The author concluded that surgical intervention was not indicated except when suffocation was threatened. M. Variot was of opinion that in laryngeal stridor attacks of suffocation did not usually occur, and this was the differential characteristic of stridor due to hypertrophied thymus. M. Comby was also of the same opinion.

Specimen: Larynx in a Case of Laryngeal Stridor.—M. RIBADEAU-DUMAS showed the larynx of a child, aged 2 months, who died of bronchopneumonia during an attack of laryngeal stridor. The lesion was the same as described for the first time in France by M. Variot, and consisted in a rolling up of the epiglottis and approximation of the aryepiglottic folds, small hæmorrhagic parathyroid spots were noticed but they had no part in the production of the stridor. M. Variot remarked how the specimen showed the falsity of the theory that attributed all cases of stridor to the action of the thymus.

Lumbar Scoliosis.—MME. NAGEOTTE showed a girl, aged 15 years, suffering from left lumbar scoliosis, in whom the wearing of an orthopædic corset very markedly altered the vertebral curve.

Enuresis in children.—M. MERKLEN read a paper on this subject. Viewing the facts in those cases where involuntary micturition depends on a well-defined cause such as epilepsy, urinary hyperacidity, etc., the enuresis must be classed as hypogenetic. This depends on incomplete development or a functional disturbance of the pyramidal system. It forms part of the

symptom-complex of motor debility and inhibition as described by E. Dupré. Out of 48 paratonics the author counted 18 enuresics, *i. e.* 37 per cent.; out of 116 non-paratonics he only found 8 enuresics, or 6·8 per cent. On the other hand, in 26 enuresics he found 18 paratonics and 8 non-paratonics. The fact that enuresis is specially nocturnal does not contradict this view; the nocturnal enuresic being in effect a diurnal pollakiuric. The hypertonia manifests itself by day as by night.

Supra-renal hæmorrhage and abscess of the liver in pneumococcal broncho-pneumonia.—MM. BABONNEIX and PAISSEAU related the case of a patient in M. Hutinel's clinique who died at the age of eighteen months of a pseudo-lumbar broncho-pneumonia complicated by purulent pleurisy. The autopsy revealed the presence of miliary hepatic abscesses and hæmorrhage in the right supra-renal. This hæmorrhage, which was considerable, occupied the entire medullary substance; its phlebitic origin, shown by the presence of sections of thrombotic vessels, seemed to have some connection with the infective hepatic lesions, which no doubt facilitated infection of the supra-renal veins. Symptoms of supra-renal insufficiency were masked by those of general infection and jaundice; only a marked hypertension would have called attention to the probability of a capsular lesion.

VINCENT DICKINSON.

Abstracts from Current Literature.

Medicine.

Impetigo and nephritis (*Med. Press,* March 3, 1909).—According to Girard impetigo in children is frequently accompanied by nephritis, the result of the cutaneous lesion: the impetigo disappears first, and afterwards the symptoms of the renal complication. Two clinical types are found, the transitory and the acute form. The first occurs in cases where only slight symptoms are found and are only confirmed by the presence of albumin in the urine. The quantity varies between 10 and 15 grains to the quart, but it may be more abundant. Hæmaturia has been found by microscopic examination, but sometimes the amount is sufficient to colour the urine; in addition epithelial and hyaline casts may be found. The other symptoms usual with nephritis are absent; thus neither œdema, cardiac trouble nor uræmic symptoms are observed, and definite recovery is the rule. Otherwise nephritis originating through the skin is a serious affection, and in some cases general anasarca has been observed. In others the œdema is hardly perceptible, a puffiness of the face and a waxy colour of the skin representing all the abnormal signs. The heart is in no way disturbed and nothing is found in the lungs, but examination of the urine reveals a more or less large quantity of albumin. In grave cases of nasal complications after impetigo the child is pale and very thin, the eyelids are somewhat puffy, the abdomen is large, with a voluminous liver, the heart dilated and the pulse rapid and irregular; the urine is of a high colour, dirty, and contains about a drachm of albumin to the quart. In the course of this nephritis uræmic symptoms, such as anasarca, oliguria, dyspnoea, epistaxis, vomiting, etc., may occur, causing the life of the patient to be in great danger. In the course of

impetigo, nephritis is consequently a complication which should not be overlooked. The urine of every child suffering from impetigo or impetiginous eczema should be examined. On the rapidity of the diagnosis, and consequently on the efficacy of the treatment, will depend the nature of the prognosis. Benign in the majority of cases, it can become very grave, this being due, perhaps, to a special virulence of the infecting germs at the seat of the cutaneous lesion, or to the general weakness of the patient.

T. R. WHIPHAM.

The biliary cirrhosis of children (infantile liver) (*Indian Med. Gaz., February, 1909*).—**F. Pearse**.—For many years a peculiar disease of the liver in infants, accompanied by fever and attended with a high mortality, has been recognised in India (Bengal). All the tissues of the body are bile-stained. The liver is at first enlarged, but later becomes small. There is no peri-hepatitis, but the external surface is granular and the liver-substance is tough. The cells are much altered, many being destroyed and others converted into masses of granular *débris*. In the portal spaces many bile-ducts are found. The intercellular connective tissue is not applied closely to the degenerated cells but forms a network, in the spaces of which the cells lie. It has been suggested that the disease is due to an irritant which primarily attacks the liver-cells and also leads to a proliferation of the connective-tissue elements. The proliferation of the bile-ducts is not so easily explained; it may be a curative process in which a regeneration is brought about by a multiplication of bile-ducts from which masses of liver-cells are formed (Paltang). The other organs of the body seem unaffected except the kidneys, which show marked degeneration and shedding of the tubular epithelium. The disease is not due to alcohol, there is no evidence of syphilis, and the pathological changes are quite different from the liver enlargement which follows malaria. The disease is almost entirely limited to children between the ages of six months and two years. Some families seem liable to the disease. It occurs among rich and poor, but Hindus seem to be more frequently attacked than Mahomedans. The onset is insidious, and the disease varies in its duration from a month only to perhaps two years. Generally the first symptom is enlargement of the liver, which is followed by vomiting, anorexia, and slight fever, while the complexion assumes a sallow hue. The liver may become excessively large and be somewhat tender. Later jaundice and œdema set in. The stools are deficient in bile, but the urine is deeply stained. Fever increases with the progress of the disease. The prognosis is extremely unfavourable, and when once started the disease is said to be almost always fatal. It occurs in sucklings, in infants artificially fed, and in children between one and two years of age, who are given all sorts of food, so that it may be reasonably concluded that the disease is a parasitic one and not due to errors in diet, but whether it is microbic in origin or due to larger forms there is no evidence to show.

T. R. WHIPHAM.

The epidemic of cerebro-spinal meningitis of Milan in 1907 (*La Pediat., January, 1909, No. 1, p. 1*).—**C. Hajech** gives interesting details of this epidemic, which occurred chiefly in children. The onset was sudden, and convulsions not rare; there was no prodromic period, the children passing suddenly from complete health to a condition which aroused alarm and compassion. The symptom which dominated the clinical picture was nuchal spasm, which was the first to appear and the last to disappear, and was the most constant and obstinate characteristic of the disease; cutaneous

hyperæsthesia came next in frequency and intensity. Among fairly constant initial symptoms were redness and swelling of the tonsils and soft palate, muco-purulent nasal discharge and redness of the cheeks. Herpes was common; usually labial-meningococci were never found in the vesicles. Erythema urticaria and sudamina were common even in cases treated without serum, as were disseminated punctiform hæmorrhages on the skin, but none of the forms of extensive cutaneous hæmorrhage were seen which have earned the name of "spotted fever" in America. Paralytic manifestations were exceptional, as was also boat-shaped abdomen. Noticeable in nearly all stages of the illness were Kernig's and Babinsky's signs, Trousseau's *tâche*, the signs of Lasèque, Leichtenstern, Oppenheim and Mendel, and exaggeration of tendon reflexes. Tremor specially in the upper limbs and trisma were also observed. The temperature was continuously raised in the first days of the illness, and was subsequently atypical. Consciousness was diminished, acetonuria frequent, albuminuria exceptional, the diazo-reaction absent, urine abundant and clear. Wasting was rapid and progressive; there were exacerbations of pain during the night. Deferescence was usually by lysis. The cerebro-spinal fluid gave Weichselbaum's meningococcus in 88·5 per cent., Fränkel's pneumococcus in 6·5 per cent., and in 4·9 per cent. a non-specified diplococcus. In children the duration of the illness in favourable cases varied from eight to forty-four days. Bronchitis, pneumonia, otitis media, pericarditis, endocarditis, parotitis and synovitis were the complications in order of frequency. The mortality was 55·6 per cent.; there were no deaths in the cases in which Fränkel's pneumococcus was found. Seventy-two per cent. of the cases were in children under 15 years of age; the youngest was aged $3\frac{1}{2}$ months, the majority between 5 and 7 years; 54·7 per cent. were males. During the epidemic, erysipelas, scarlatina and pneumonia were especially prevalent, while measles was conspicuous by its absence, and it was a strange fact that not a single case of gonococcal vulvo-vaginitis, which had been very prevalent, was observed in the children's section. Although the disease is admittedly contagious, the Milanese epidemic did not furnish any proofs of it to a noticeable degree.

VINCENT DICKINSON.

Severe illness caused by the prolonged use of vegetable broth in an eczematous child (*La Clin. Infant.*, February, 1909, No. 4, p. 114).—**M. G. Variot** described this case at the Soc. Med. des Hôp. The child, aged 15 months, who had been breast-fed, began to show signs of eczema when about six months old. Cow's milk was substituted, but the eczema persisted. Milk was then forbidden as being "toxic for this child" and producing diarrhœa. Broths made with vegetables and chicken or beef and salted were the only foods now given. The effect of this *régime* was that the infant rapidly wasted, and was subject to attacks of eczema alternating with diarrhœa and anasarca. Tetany was also noticed. The abdomen became ascitic, and there was an intense erythema on the buttocks and thighs. On a return to milk diet all these symptoms disappeared, except that the child had a little facial eczema. There can be little doubt that all the symptoms, especially the anasarca and tetany, were due to deprivation of milk and prolonged use of salted broth. Recently Heim and John have drawn attention to the important part played by chloride of sodium and bicarbonate of soda (5 grm. of each to a litre of water) in order to explain the efficiency of a watery diet in the treatment of diarrhœa. They estimate that the absorption of these saline solutions contributes in preventing dehydration

of the tissues at the end of a diarrhoeal flux; and besides, have observed under these circumstances very rapid increase of weight, which they attribute to the retention of chlorides, and which co-exists with the appearance of subcutaneous œdema of the face and limbs (*vide* 'Presse Medicale,' May 30, 1908). It may be asked whether vegetable broths do not act in acute gastro-enteritis by reason of the salt which has been added. In the case reported it was evident that the anasarca was due to the retention of chlorides, since it ceased immediately on the resumption of milk. Vegetable broth may be useful in combating gastro-enteritis, just as rice-water, or the salt and bicarbonated solutions of Heim, or plain boiled water, but their nutritive value is next to nothing, and the result of their prolonged use in infants in place of milk is inanition, often complicated with serious disorders.

VINCENT DICKINSON.

On essential incontinence of urine ('*La Clin. Infant.*,' February, 1909, No. 8, p. 85).—**M. Perrin**, in a communication to the Fribourg Society of Medicine, studies different types of this affection, and draws attention to the fact that it occurs only at night. The cause of this is too heavy sleep, which prevents the desire to micturate waking the child. This is confirmed by two facts: first, nocturnal enuresis is almost exclusively observed in infants who are the subjects of respiration obstruction, and who sleep too soundly due to carbonic acid intoxication; secondly, the complaint is cured only when the primary cause disappears. The author thinks that nocturnal incontinence is explained by the fact that the lethargic sleep of a child puts his brain completely out of action, and hence, as the medullary centre acts alone, when the bladder feels the desire to empty itself this medullary centre, instead of transmitting this communication to the brain, takes a responsibility which it is not capable of in giving a direct order to the detrusor to act. In the waking condition it is otherwise; the brain intervening, the sensation of "full bladder" passes from the bladder to the medullary centre, then by the spinal cord to the cerebral centre of perception. Thence the impression is transmitted to the centre of interpretation, and this transmits it to the motor centre, which acts when convenient.

VINCENT DICKINSON.

Ascarides in an infant, aged 13 months ('*Lyon Médical*,' February, 1909, No. 7, p. 340).—**Weill and Mouriquand** reported to the Soc. des Hôpit. de Lyon the case of an infant with ascarides, a rare affection at this early age. The illness began with colic and screaming, and fourteen days after the infant for the first time passed ascarides; gastro-intestinal troubles followed, with glairy loose stools, ten *per diem*, containing ascarides. On admission the child cried continually, the abdomen was slightly tympanitic; he vomited, with sudden cessation of the symptoms, a mass of entangled worms about the size of a small orange. The same attacks continued the following day, ending always in the same way. From an ætiological point of view, it is difficult to explain the presence of ascarides in an infant fed on milk; the mother related, however, how he had on several occasions put earth into his mouth.

VINCENT DICKINSON.

Sudden death: hypertrophied thymus ('*Lyon Médical*,' February, 1909, No. 7, p. 337).—**L. M. Bonnet** reported to the Soc. Med. des Hôpit. the case of an infant, aged 8 months, admitted for a slight skin affection. One night he woke up crying, which ceased in about a quarter of an hour. He then was seen to be breathing slowly and feebly, but there

was no cyanosis. He remained in a prostrate condition for about three hours and then died. The autopsy showed nothing abnormal in the heart or abdominal viscera; there was a little bronchitis, but no pneumonia. The thymus was markedly enlarged, weighing 37.50 grammes; to the naked eye its structure seemed normal. The thyroid, suprarenals, and lymphatic glands were of normal size. The trachea was not flattened, showing that death was not caused by tracheal compression.

VINCENT DICKINSON.

The naso-pharyngeal origin of chorea (*Bull. et Mém. de la Soc. Française d'Oto-Rhino-Laryngol.*, 1908).—**S. L. de Ponthière** (Charleroi).—It is exactly twelve years since I had the case of a girl, aged 9 years, brought by her parents to the department for diseases of the nose and throat, at the Hospital of St. Peter at Louvain. This child had been severely attacked some eight months earlier with all the symptoms of Sydenham's chorea: convulsive involuntary muscular movements of the head and limbs, ataxic contractions of the face to the point of embarrassing speech, etc. But it was not for this condition (which, as it had resisted medical treatment, was considered by her relations to be incurable) that the child came to the laryngological department; it was to put an end to the naso-pharyngeal troubles to which she had been subject for several years. This child had an exclusively buccal respiration; she snored, caught colds, had anginas and glandular attacks. The fœtid breath, morning anorexia, pain in the side, nightmares, etc., completed the tonsil-adenoid syndrome, save for ear complications. Examination—not easy, in view of her condition—revealed the presence of adenoids and tonsils with infected crypts, which I removed several days later under chloroform anæsthesia. When I saw the patient again, eight days after, it was not without some astonishment that I found a favourable change had come, not only in her naso-pharyngeal function, but especially in the evolution of her neurosis. The disordered and incessant movements of the chorea were evidently retrogressing. Already the child could rest several minutes without wriggling as before, and matters went so well without the addition of any treatment that three weeks later not the least symptom of this affection persisted, an affection which is not always transitory, as some are pleased to think, nor inoffensive, as observation abundantly demonstrates. I carefully refrained from concluding from this case that the radical treatment of chorea was either discovered or confirmed, for I was at that time not without knowledge of the regrettable excesses into which, like most of the still young sciences, fell the rhinology which was proclaimed *urbi et orbe* by the voice of its most ardent neophytes, as putting an end to endometritis, regulating the action of the heart with inefficient valves, or re-establishing nephritic kidneys by sticking forceps or cautery into the nose. It was then the age, as M. Lermoyez recently put it, not of *nosology*, but of *nasology*. At that time I was, therefore, content to ask my colleague in the in-patient department to send me all the chronic chorea cases, considered as partly incurable, which were to be found there in much greater numbers than in the otological service, and later to allow me to examine their naso-pharyngeal regions in my own clinic. And I hasten to state that the number of these patients who benefited by surgical treatment was very considerable. If I do not give here numbers to show, according to my theory, what was the exact proportion of choreics examined and of those who were cured by an operation, it is because I consider that statistics do not amount to much, and that it is far more interesting to know

on what it is necessary to base a conclusion than to say that in 30 or 60 per cent. of cases the facts ought to turn out as expected. For twelve years, therefore, I have had my attention drawn to the pathogenesis and treatment of chorea, and I must say, without hesitation, that I am convinced that, much more frequently than the general physician can imagine, its rapid and permanent cure, and not a passing improvement, depends upon the *surgical treatment of the naso-pharynx*. Now, in going over the most recent papers and the most brilliant reviews on chorea, if they are all unanimous in recommending the often fallacious benefit of a therapy based on chloral, bromide, antipyrin, salicylate of soda, arsenic, etc., mingled with hygiene and various tonics, not one, I think, points out in return the possible existence even of a surgical treatment. Nevertheless, in attentively following, step by step, the symptomatology of what in reality is itself only a prominent symptom and not a morbid entity, to understand the chorea of Sydenham, which must not be confounded with the dance of St. Guy [our term "St. Vitus' dance" is called by the French "the dance of St. Guy," M. Y.], one cannot but be struck by the analogy which exists between the choreic person and the choreic with auto-intoxication of naso-pharyngeal origin. As regards the precise origin of this last term, "dance of St. Guy," let this be said to satisfy the curious: Every year, in the month of May, is celebrated a festival at a chapel of St. Guy, near Ulm (an imperial city on the Danube, in the circle of Swabia), where all the fanatics of the neighbourhood dance day and night until they fall into convulsions or become ecstatic, all in honour of the Saint (G. Buchan, M.D., '*Treatise on Medicine*,' 1802). In a general way Sydenham's chorea, a cerebro-spinal neurosis involving the motor and psychic system, appears to us essentially unknown. One finds it most frequently at the period of the second dentition or at the approach of puberty; most often in the female sex, it shows itself especially in children of delicate or feeble constitution, and particularly in lymphatic subjects or those predisposed by their condition to disorders of innervation. Rainy and cold months and living in low and damp situations certainly favour its appearance. The pathogenesis of chorea may be summarised in two great theories: (1) The *neurosis theory*, which seems to me less solid in reality than in appearance. (2) The *theory of rheumatic infection*, which reckons, with reason, the largest number of adherents. It goes without saying that other infections, which are not, properly speaking, of the rheumatic type, play an equally, but less frequently, undeniable part. The onset of the disease is rarely sudden. It is almost always slow and gradual. Slight modifications of mind, intelligence and motility are very often noted. The children are less cheerful, more capricious, more impressionable. They weep easily, are quickly frightened, and seek to be alone. They are vacant, their memory is impaired, they are less apt at intellectual work: their sleep is broken, often troubled by nightmares, night-terrors, hallucinations of sight and hearing. They grimace involuntarily, thus drawing upon themselves useless reprimands. They often complain of sensory disorders, pains, numbness of the limbs, headache, painful stitches in the side, and dyspnoea on the slightest exertion. These are, classically, the chief symptoms presented by choreic cases. But is this not rather to be explained, in several close features, by the symptomatology of an adenoid case? The aprosexia, the disturbed nights, the lymphatic temperament, even down to this last detail given by some authors: a certain degree of hebétude which persists in the choreic, even when he has been cured for some years, does it not give a faithful picture of

the pitiful little dunces of nasal origin? But this analogy, thus summarised simply in its main points, luminously explains the infectious origin of chorea. It is, however, necessary to divide the possessors of tonsils and adenoids into two main classes. In the first group come those in whom the lymphatic organs are simply hypertrophied but *healthy*, only playing, therefore, the part of purely mechanical obstruction. In the second group, the more numerous, are classed those in whom the tonsils or adenoids, whatever be their size, are *infected*, almost continually secreting septic products, which are sniffed up, swallowed, and slowly, but surely, poison the whole economy. This chronic auto-intoxication admirably prepares the ground for producing all diseases and particularly nerve disorders. And when one knows that common constipation produces symptoms of meningism, especially in children, there is nothing astonishing in a nervous system, habitually bathed in and nourished by a blood which carries septic principles, showing its condition of discomfort by choreiform manifestations. This equally explains the poverty of work done in the way of autopsies or histological researches instituted with the idea of finding cerebro-spinal anatomical alterations which have been thought to be produced by chorea. This infection, which draws its source from the naso-pharynx, may be of different kinds, but it is none the less true that it is the infection of the rheumatic type which predominates in this region and which lurks in the tonsils and in the adenoids before giving origin to articular or visceral complications. All the erythematous and pultaceous anginas of infancy are serious warnings. It is they which, by their repetition, establish in after years the more or less accentuated, but pure, arthritic type. Everyone knows how frequently these acute anginas, rheumatic or gouty, disappear to give place to arthritides or cardiopathies. It is a no less established fact that articular rheumatism commences generally, not in the articulations, but in pharyngeal manifestations. Often, even, the rheumatism does not go beyond this region throughout the duration of a long life. The great mistake of those who refuse to see the relation which exists between chorea and rheumatism lies in their own unreasonableness. Indeed, to exclude rheumatism, they instance the case of chorea *preceding* the rheumatic, articular, or cardiac manifestations. But who would dare to seriously pretend that every rheumatic manifestation ought, to earn this qualification, to be accompanied by these great and startling manifestations? It is as if one denied syphilis in a patient because he did not yet show the nasal falling in! Are not the generality of the patients with high tension or congestions, the migrainous, of those even who simply experience lumbago or more or less painful erratic spots, etc., true arthritics? The influence of the eruptive fevers—scarlet fever, measles, smallpox, etc.—is often equally accused of favouring the origin of chorea. This influence is unquestionable, for the excellent reason that it is daily demonstrated that very often, after these fevers, a pharynx which was healthy before has its tissues become and remain infected, noticeably hypertrophying, and then presenting all the symptoms which result from naso-pharyngeal obstruction and infection. Clinical observation, therefore, very frequently confirms the naso-pharyngeal origin of rheumatism. A further character which contributes to show the influence of the rheumatic poison in chorea is the condition of profound and special anæmia met with in patients attacked by or just cured of this neurosis. Hence the habitual indication, in the therapy, of tonics, reconstituents, etc. Another point, equally drawn from therapeutics, again supports this conception: it is the preponderance of the action of antipyrin, salicylate of soda, and colchicum,

which, if they do not cure, at least unquestionably relieve in the great majority of cases, whilst bromide and chloral merely stupefy the patient without bringing real relief, if it is not the benefit which results from the loss of appetite which they provoke and which thus more or less allows the organism to get rid of the toxins with which it is so saturated. Now if all the tonsil-adenoid cases do not start chorea (far from it), it is because, as I have already said, they are not all infected; in the second place because the infection of their naso-pharynxes naturally may present every degree in the scale of the virulence, quality, and septicity of the microbic flora there located, and especially (and I insist upon this last point) because the *soil* is not the same in all. It is necessary, to do intelligent work, not to allow the important factor of the soil to pass, a factor which one has too great a tendency to ignore and to replace by theories and hypotheses, which are too often only seductive juxtapositions of scientific terms. There is yet one last argument which is more eloquent than all denials or expressions of scepticism; it is the argument of fact. If it can be interesting to know what is exactly the coccus or bacillus which intervenes to cause chorea of naso-pharyngeal origin, I consider that it is much more useful to know if one can bring about a rapid cure in a chronic choreic who withstands the action of medicines. Now each time that I have met with one of these patients and have diagnosed in him the presence of tonsillar hypertrophy or adenoids, of which it is so easy to demonstrate the acute or *chronic* pathological condition, I have seen the cure of the chorea follow the operation practised very closely. As it is easy to understand, it is these morbid conditions which do not belong to the chorea properly speaking and which are only the symptoms of various affections of the nerve centres. Such are, for example, St. Guy's dance, remarkable for the violent onset of the convulsions and the intermittence of the attacks; then the disorders of motility described by Romberg under the name of "static convulsions" or "static cramps," such as irresistible tendencies to go forward (propulsive chorea), to retreat, to go to right or left, to turn round and round (rotatory chorea). These disorders, often given the name of "chorea," are not continuous and return in attacks. They have for effect a locomotion of the patient, always in the same direction; they do not present the characters of choreic movements, and are often accompanied by cerebral symptoms. Jumping, vibrating, hammering choreas, that is to say, rocking, oscillation of the trunk or its members, are due to localised and intermittent spasms, dependent upon the same cause or allied to hysteria. In these varieties, indeed, one does not often find any indication on the side of the naso-pharynx, and investigations should be prosecuted as to the function of all the other systems in order to try and find out where the cause of the manifestations is located. To sum up, therefore, convinced of the very great frequency of the rheumatic origin of chorea and of the equally frequent existence of the naso-pharyngeal source of the rheumatism, applying myself to the lasting and rapid success obtained in the treatment of chorea by the surgical removal of this powerful source of intoxication formed by the tonsils or pathological adenoids, I cannot too strongly urge my colleagues to pursue, by their researches, what can only be the confirmation of the facts which I have the honour to put forward.

MACLEOD YEARSLEY.

The injurious habits and practices of childhood: their detection and correction (*Med. Record*, June 20, 1908, p. 1030).—Karl Goldstone discusses simple masturbation, "habit spasm," sucking pica, nail-biting,

head-banging, spasmus nutans, pavor nocturnus and enuresis. He refers to the recondite ways in which young children produce pleasurable genital sensations by rubbing against a chair, the mother's knee, the pillow, etc. He mentions a case of masturbation in a child, aged 5 months, and remarks that the habit is far commoner amongst girls than boys. He rightly emphasises the tremendous importance that the habit has in relation to later psycho-neuroses.

ERNEST JONES (Toronto).

A case of kala-azar ('*Allg. Wein. med. Zeitung.*,' December 8, 1908).—**Sluka** showed a boy, aged 9 years, at the Vienna Medical Society. The disease had lasted since the fourth year, and began with fever, emaciation, and abdominal swelling. The ascites disappeared but had returned. The boy had formerly been in India. The liver and spleen were enlarged. Blood showed leucopenia and increase of mononuclear leucocytes. Diagnosis, which lay between tuberculosis, Banti's disease, and kala-azar, was established by the presence of Leishmann's protozoa in the fluid drawn off by puncture of the spleen.

M. D. EDER.

Achondroplasia ('*Allg. Wein. med. Zeitung.*,' December 8, 1908).—**Horhsinger** showed a boy, aged 8 months. The head was enormously big, strikingly hard and massive, the upper arm strikingly short, the fingers trident formed. Röntgen picture confirmed the diagnosis of chondrodys-trophia foetalis. The disease must be differentiated from rickets, osteoparesis, and myxoedema. Important diagnostic points are the flattening of the root of the nose and rosary of the ribs.

M. D. EDER.

The prognosis of lung tuberculosis based on the Wolff-Eisner conjunctival reaction ('*Zeitschr. f. Tuberculose.*' 5, Bd. 14, Heft 1).—**Schuster** is of opinion that when the Wolff-Eisner reaction has been harmful in some cases, most probably the method has not been carried out properly. He thinks that, by the amount of reaction, one can form a prognosis for the period of the next two or three months, during which time the physical signs may be further considered. He says a negative result is (1) unfavourable as indicating decided tuberculosis, (2) favourable as indicating slight lung change. A markedly positive occurrence of the conjunctival reaction resembles the negative reaction according as—(1) in decided tuberculosis it shows that the body is approaching the limits of its power of resistance, and in this case the prognosis is inclined to be unfavourable; or (2) in slight lung changes it shows that there is not sufficient active tuberculous material in the body to cause the organism to succumb, then the prognosis is favourable. The markedly positive occurrence of the conjunctival reaction shows (1) in certain tuberculosis that the body at the time of administering the test, and probably also under suitable therapeutic influence, is resistant, but later on may have to wage battle with the tubercle bacillus and its toxins; (2) in slight lung changes that active tuberculous material is present in the body, but that probably later on the organism may be able to cope with the struggle which has to occur.

Ziegler ('*Beitrage zur klin. der Tuberculose.*' Bd. 12, Heft 1), after testing the conjunctival reaction in 600 cases, comes to the conclusion that for the early diagnosis and prognosis of lung tuberculosis the method is "absolutely useless."

J. E. BULLOCK.

Gastro-intestinal disturbance at the onset of scarlet fever ('*Presse Méd.*' 1909, p. 129).—**C. Lesieur** and **L. Baur**.—Among 100 patients

studied in Weill's service at Lyons sixty-seven presented digestive troubles at the onset of scarlet fever, which consisted in nausea, vomiting, and diarrhoea. Only one case showed evidence of appendicitis. The nausea was an early symptom, sometimes preceding but usually contemporaneous with the angina. It lasted twenty-four to forty-eight hours, and then usually disappeared. In only one case observed by the writers was the vomiting uncontrollable. This was in a fatal case of scarlet fever complicated by mumps. Diarrhoea is a very early symptom, is preceded by violent colic, and is of brief duration. It is usually followed by slight constipation. The digestive troubles did not seem to bear any relation to the angina, a mild sore throat being accompanied by as much gastro-intestinal disturbance as a severe case. Ninety-four of the cases showed the characteristic eruption of scarlet fever. Six cases had no rash, but had more or less digestive disturbance. The writers conclude that these symptoms have some diagnostic value in scarlatina without eruption.

J. D. ROLLESTON.

Gastric ulcer in children (*Thèses de Paris*, 1908-9, No. 55).—A. Lasnier has collected eighteen cases, one of which is original, of gastric ulcer in children whose ages ranged from two months to fourteen years. Ten occurred in girls, eight in boys. In four cases anomalies of development resulting in infantilism were noted. Two reasons are assigned for the rarity of gastric ulcer in children. (1) Hydrochloric acid is secreted in much smaller quantities in children than in adults, especially during the first four years of life. (2) The food passes much more rapidly from the stomach into the duodenum in children. Latent forms are those most commonly met with. In some cases there may be a period of vague digestive disturbance; in others repeated hæmatemesis or sudden perforation following a violent effort or emotion or without apparent cause is the first sign. The true condition is usually not learnt till the autopsy, peritonitis due to some unknown cause having been diagnosed during life. Pain was present in more than half of the cases, but was never acute except in stenosis or perforation. Its localisation is difficult. Hæmatemesis was absent in two thirds of the cases. In more than a third of the cases perforation took place. Half the cases ended fatally, but as only complicated cases were recorded the prognosis is probably not so grave as would appear at first sight. Treatment, as in the adult, should consist in complete rest of the stomach.

J. D. ROLLESTON.

Intussusception in typhoid fever (*Progrès Méd.*, 1909, p. 123).—R. Cruchet and Desqueyroux. A boy, aged 7 years, was admitted to hospital in the third week of typhoid fever, and died two days later. His symptoms were uniform abdominal distension, tenderness of the caecal region, and vomiting. Perforation was diagnosed. Death took place before an operation could be performed. At the autopsy, in addition to the characteristic typhoid ulcers, an ileo-caecal intussusception was found, the length of the invaginated ileum being 20 centimetres. A few cases of intussusception during typhoid have been recorded in adults, but none hitherto in children.

J. D. ROLLESTON.

Typhoid fever without intestinal lesions (*Progrès Méd.*, 1909, p. 73).—E. Sacquépée and F. Chevrel record two cases. (1) Girl, aged 4 years, was admitted to hospital after four days' malaise and fever. On admission

there was abdominal distension, profuse diarrhœa, and prostration. Temperature 100.4° F. On the tenth day rose spots were seen on the abdomen, and *B. typhosi* was isolated from the blood. Eleventh day: nuchal rigidity, contracture of lower limbs, and Kernig's sign; Widal positive. Fourteenth day: death. The autopsy showed only congestion of the intestine and mesenteric glands. The brain was congested, the cerebro-spinal fluid was normal. Cultures from the heart, blood, lung, and spleen yielded *B. typhosi*. (2) Girl, aged $3\frac{1}{2}$ years, was admitted on the third day of disease to a hospital in which three other members of the family were suffering from typhoid, with profuse diarrhœa and great prostration. Temperature 102.2° F. Seventh day: rose spots and enlargement of the spleen. Ninth day: Widal positive. Tenth day: death. Autopsy: intestine congested, no other lesions. Cultures from heart, blood, spleen, pulp, and lungs yielded *B. typhosi*. A large proportion of the cases of typhoid fever without intestinal lesions occurs in young children. A meningeal reaction is frequent. Owing to the intensity of the septicæmia the prognosis is grave. On the other hand there is no risk of perforation and peritonitis. J. D. ROLLESTON.

Measles at the Hôpital des Enfants Malades ('*Thèses de Paris*, 1908-9, No. 167).—Mlle. **Corentsvète**.—This thesis, inspired by Professor Hutinel, contains the histories of 31 cases, of which 27 are original. During 1908 there were 970 cases of measles at this hospital, 92 of which arose after admission, 110 died: 71 cases with 24 deaths occurred in the medical wards, 21 with one death in the surgical. The highest death-rate was in the nurslings' ward, where the mortality was 62.5 per cent. The low morbidity and mortality on the surgical side are attributed to the prevalence of disinfection and asepsis, the comparative rarity of respiratory and gastro-intestinal affections which are so common in the medical wards, and to the higher age of the patients. As prophylactic measures the avoidance of overcrowding, the practice of antisepsis on the medical side, and the early isolation of those infected are recommended. J. D. ROLLESTON.

Empyema in scarlet fever ('*Bull. et Mém. de la Soc. Méd. des Hôp. de Paris*, 1909, p. 643).—**Simonin** records three cases in soldiers of this rare complication. In the first case streptococcal empyema developed on the eighth day of a scarlatinal attack of moderate intensity. The evolution was rapid, and death occurred in spite of early operation. In the second case a streptococcal empyema developed on the twenty-ninth day of scarlet fever. Death took place from uræmia forty-eight hours after the operation. In the third case, which did not undergo operation, pneumococcal empyema secondary to consolidation of the right apex was followed by fatal septicæmia. J. D. ROLLESTON.

Uncinariasis in the Southern States ('*Pediatrics*, 1908, p. 751).—**J. R. Snyder** draws attention to the prevalence of hook-worm diseases, which C. Wardell Stiles considers to rank in frequency with malaria, tuberculosis, and gonorrhœa in the Southern Atlantic States. Uncinariasis is due to soil infection from careless disposal of fæces, and is therefore a preventable disease. Children and women are more severely affected than men. Anæmia is the characteristic symptom. The infected children are dull and apathetic, and soon tire at work and play. In severe cases there may be extreme abdominal distension. Dirt-eating is not an uncommon symptom. The diagnosis is settled by the presence of the eggs of the hook-

worm in the stools. The prognosis is good in recent cases, but in old-standing cases the retardation of physical, mental, and moral development may seriously handicap the patient in later life. Treatment consists in the administration of thymol (5 to 20 gr.), preceded by a large dose of magnesium sulphate.

J. D. ROLLESTON.

The association of measles with scarlet fever (*Bull. et Mém. de la Soc. Méd. des Hôp. de Paris*, 1909, p. 171).—**Gouget**.—This association is not rare, especially in hospitals. Nearly all authorities are agreed as to its gravity. Measles following scarlet fever is more serious than scarlet fever following measles, owing to the frequency of broncho-pneumonia in the former case. During 1908, 676 cases of scarlet fever were under treatment in the Pasteur block at the Claude Bernard Hospital in Paris: 39 developed measles; all recovered. None contracted broncho-pneumonia. Gouget attributes this unusually favourable result to the early isolation of the patients by means of Koplik's spots and to individual isolation. In the subsequent discussion **L. Martin** insisted on the importance of individual isolation. The agglomeration of many cases in the same ward favoured the occurrence of complications. The low measles mortality of 3·4 per cent. at the Pasteur Hospital where such isolation was in force was in marked contrast with that in children's hospitals where the disease was not isolated. Thus at the Trousseau Hospital the mortality was 25 per cent., at the Enfants Malades 40 per cent., and at the Enfants Assistés 46 per cent.

J. D. ROLLESTON.

Surgery.

Gall-stones in a girl, aged 17 years (*Bristol Med.-Chir. Journ.*, 1908, p. 317).—**Carwardine** reports the case of a girl, aged 17 years, who for two years had suffered from indigestion independently of food. Three months previous to admission she had pain across the epigastrium and in the back, chiefly on the left side, and jaundice appeared when the pain ceased. The urine was dark and the motions were of a light colour. The jaundice subsided, but a second attack of pain occurred, and this in its turn was followed by a repetition of the jaundice. At the operation adhesions were found about the gall-bladder, which was surrounded by jelly-like lymph. The liver was large and congested, and the gall-bladder, which was of a yellowish colour, contained a milky fluid, stones and sand. An incision was made into the common duct, in which there was a large stone extending up into the cystic and hepatic ducts, which were full of stones and grit. The ducts were cleared of their contents and adequate drainage was provided. The pancreas was harder than normal. The patient made a rapid and perfect recovery.

T. R. WHIPHAM.

Pancreatic cyst in a boy, aged 7 years (*Bristol Med.-Chir. Journ.*, 1908, p. 319).—The same author also describes this case. The patient, who was a thin boy, fell off his bicycle and struck his abdomen against the handlebar. When seen two hours later there was a slight contusion over the left hypochondrium with pain and tenderness in the epigastrium. There was but little shock and no rigidity of the abdomen. The pain continued with severe colicky exacerbations, the temperature being 100° to 101° F., and the patient was frequently sick. Five days after the accident a rapidly increasing swelling was felt in the epigastrium with a well-defined lower

edge. The pain became more severe and the swelling increased in size till it reached three inches below the umbilicus and occupied the whole of the right side of the abdomen. The patient lost flesh, and three weeks after the accident the swelling still further increased in size and vomiting occurred. A week later the abdomen was opened and about three pints of clear yellowish fluid were withdrawn from a cyst, the wall of which was about one eighth of an inch in thickness and friable. The fluid was alkaline, specific gravity 1008, and contained 5 parts per 1000 of albumin (Esbach) and a considerable quantity of fat with pigment, cholesterolin, and calcium crystals. Trypsin was found to be present, and a reducing substance, which was not sugar. After the operation very little more fluid escaped, but four days later a swelling appeared in the epigastrium and rapidly enlarged. The pain returned and the patient's general condition became worse. The abdomen was again opened, and on dividing the gastro-colic omentum a tense cyst was found, from which about one and a half pints of fluid with some coagulated serum escaped. The discharge was continuous and profuse, and caused considerable irritation of the skin, as if from digestion. The cavity was therefore washed out with weak adrenalin solution, and the patient was fed on raw and cooked sweetbread. After ten days the discharge rapidly diminished and the wound soon healed, the patient being perfectly well a year after the operation. The cyst first occupied the lesser peritoneal sac, and then involved the right loin through the foramen of Winslow. After the first operation the foramen must have become closed, leaving a retention cyst in the lesser sac of the peritoneum.

T. R. WHIPHAM.

Basal hæmorrhage in a girl, aged 16 years (*Bristol Med.-Chir. Journ.*, 1908, p. 322).—**Carter** records the case of a girl, aged 16 years, who was well developed and very anæmic. Her mother had had nine children, four of whom had died in childhood and four or five very early miscarriages, but not in series. The patient had complained of headaches, noises in the head and some deafness with indigestion. One day she vomited and on the next became apparently hysterical, but later lapsed into a state of coma with contracted pupils, exaggerated knee-jerks, a well-marked Babinski's sign and Cheyne-Stokes' respiration. At the apex a blowing systolic murmur was present. The coma deepened, the pupils became dilated, and the right optic disc became blurred and indistinct. The right side was a little more flaccid than the left, but no definite localising signs could be obtained. The urine was passed in the bed, and in its absence for examination basal hæmorrhage was considered as the probable cause of the condition. Convulsions supervened, and the girl died on the third day after the onset of the symptoms. At the necropsy the blood was found to have a diminished coagulability; an ulcer was present on the anterior wall of the stomach; the abdominal and cephalic arteries were thin walled. There was no lesion in the heart and no thrombi in any of its cavities. At the base of the brain there was a large hæmorrhage, which appeared to have originated from the right posterior cerebral vessels. No hæmorrhage was found in the pons or medulla, but in several cortical areas there were appearances suggestive of capillary hæmorrhage. The source of the bleeding was a venule or fibrosed arteriole, which opened into an aneurysmal dilatation. Neither atheroma nor endarteritis obliterans were present, and no syphilitic changes were found in the viscera or bones. The lesions may be ascribed to some congenital defect in the blood apparatus, as no sign of embolism could be discovered.

T. R. WHIPHAM.

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Original Articles.

TWO CASES OF CHRONIC PEMPHIGUS.

By ARTHUR J. CLEVELAND, M.D.Lond., M.R.C.P.,
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WITH NOTES OF THE BACTERIOLOGICAL FINDINGS.

By G. P. C. CLARIDGE, M.B., B.S.Lond.,
Curator of the Museum, Norfolk and Norwich Hospital.

CASE 1.—Boy, aged 3 years. Admitted under me into the Jenny Lind Hospital for Children on October the 7th, 1908. He is one of three healthy children; the father and mother are healthy and have not lost any children. He lives in the country, and Dr. Sturdee, of Walsingham, who sent the child in, kindly sent me the following notes of the onset of the disease: "First seen on May the 10th, 1908. Feverish and had been sick—quite well two days ago. Throat injected; tonsils swollen; follicles plugged. Scarlatiniform rash over body. Scarlatina prevalent in the village; diagnosis scarlatina. May the 13th: Child better in himself. Rash present over lower extremities. In the groins and popliteal spaces were several large blebs. May the 16th: Better. May the 21st: Some sore places, like vaccination spots, on thighs. May the 25th: Peeling. Fresh blebs have appeared from time to time."

The boy's general health got quite right, but he continued to have fresh crops of vesicles from time to time, many of which became purulent and caused him a good deal of discomfort, until his admission. Condition on admission: He is well nourished and developed. The skin over the legs, thighs, genitals, buttocks, arms, part of the face, and back of the head is covered with blebs, many of which have become pustular. They are all small, only few being larger than a shilling piece. There is nothing else abnormal about the child. Temperature 99° F.; pulse-rate 100. Treatment: Boracic bath twice a day, four-hourly boracic fomentations, liquor arsenicalis *mj t.d.s.*

On October the 27th Dr. Claridge obtained a pure culture of *Staphylococcus albus* from a bleb.

November the 9th.—Some fresh blebs have appeared during the last fourteen days, but he is much better. One hundred million dead staphylococci from a stock vaccine injected.

November the 14th.—Fresh spots.

November the 15th.—Temperature 101° F.

November the 17th.—Temperature normal; copious vesicular rash over thighs.

November the 20th.—Complains of abdominal pain; rash clearing up. Fifty million staphylococci injected.

November the 23rd.—Culture taken from a fresh bleb and an organism identical with that found in Case 2 obtained.

Until January the 21st, 1909, when he was discharged, fresh blebs appeared, generally in crops, but they were not so numerous as before, and the careful protection of them by antiseptic dressings prevented secondary infection by pyogenic organisms to any great extent. The arsenic was gradually increased until he was taking 15 minims of the liquor *per diem*. In June, 1909, Dr. Sturdee reported that the boy had been better on the whole, the blebs being neither so numerous nor so large.

CASE 2.—Girl, aged 6 years. Parents both healthy; they have three children living and one died of diarrhœa. The present disease began when she was two years old, the rash appearing first on the legs. She has been frequently in the Jenny Lind and Norfolk and Norwich Hospitals for this disease, otherwise she has enjoyed good health. The appearance of the blebs is often preceded by a rise in temperature to 102° and 103° F. which occurs suddenly about twenty-four to forty-eight hours before the eruption and is attended by some constitutional disturbance. Practically all

her skin except the scalp has been affected at different times, though the lower extremities and genitals are the favourite sites. Some of the blebs are an inch across and hæmorrhages occasionally occur into them. Unless carefully treated they quickly become purulent, and her general health has in consequence been sometimes seriously affected.

She is well grown and nourished and usually eats heartily. Boracic baths and fomentations combined with arsenic internally have proved the least unsatisfactory form of treatment.

During her stay in the Jenny Lind Hospital this year Dr. Claridge took cultures from the blebs, and has kindly furnished me with the following report:

"Fluid from a bleb twenty-four hours old contained pus and *Staphylococcus albus* and an organism growing in minute colonies. A pure culture of this latter was afterwards obtained from a three hours' bleb which contained clear fluid and no pus-cells.

"This organism grown on agar formed circular translucent colonies .1 to .15 mm. in diameter.

"On gelatin at 20° it grew with the same characteristics.

"Stabs into agar and gelatin gave a growth along the whole line of the stab. In broth there was at first an even turbidity. After several days clumps of organisms were seen at the bottom of the tube. No more vigorous growth could be obtained on blood agar or hydrocele fluid agar. Microscopically the organism was a coccus, growing mostly in pairs, but in places in short chains up to six or eight. These took Gram's stain, but some were easily decolorised."

A vaccine was prepared by Dr. Claridge from this organism and the child given three doses of it at intervals. The effect was to raise her index above normal for two or three days only.

The injections had no influence on the disease, possibly because, as Dr. Claridge thinks, they were not large enough, and the child was lost sight of for some months.

Both these cases were clinically typical examples of chronic pemphigus, the cause of which has been ascribed by some to a faulty nervous system, by others to an infection with micro-organisms.

I regret that I was not able to give both these children a thorough treatment with the vaccine made by Dr. Claridge, for had a successful result followed it would have definitely established the "septic" nature of the disease.

That the treatment with a staphylococcal vaccine had no effect is scarcely to be wondered at, since Dr. Claridge's investigations

show that the infection with staphylococci does not occur until some hours after the appearance of the vesicle.

The coccus which he obtained in pure culture, however, apparently exists in the vesicle as soon as it is formed. The usual treatment of pemphigus has in my experience proved most unsatisfactory, and although I incline to the view that the cause of the disease is probably to be found in some defect of the nervous system, I think that a careful bacteriological examination of each case might do a great deal towards enlightening us as to the origin and treatment of an obscure and obstinate complaint.

THE ÆTIOLOGY OF CONGENITAL WORD-BLINDNESS; WITH AN EXAMPLE.

By W. J. RUTHERFURD, M.B., Ch.B.

IN 1896 Dr. W. Pringle Morgan described a case of the congenital form of word-blindness,* and four years later Dr. Hinshelwood, of Glasgow, reported two further instances.† Stone and Douglas‡ two years later, in 1902, described hereditary aphasia, the corresponding defect in the receptive centres, and in 1905 Dr. C. J. Thomas called attention to the fact that this congenital form of word-blindness may assume a family type.§ In 1907 Hinshelwood, confirming the observation made by Thomas, described a family group|| in which no less than four brothers out of a family of eleven children were the subjects of this defect. The family history of the present case here detailed goes still further to prove the ætiological influence of germ-plasm defect, and not merely of this alone but of the effect of in-breeding, in giving rise to congenital word-blindness, or, as it may with propriety be termed, dyslexia congenita.

Bertha Ellen S—, aged 10 years. This patient, although ten years of age, cannot read without difficulty even words of one syllable. Such words as *an, of, the, if* she reads with ease, but monosyllables of slightly more complex type like *harsh, think, first*

* W. Pringle Morgan, 'Brit. Med. Journ.,' November the 7th, 1896.

† Hinshelwood, 'Lancet,' May the 26th, 1900.

‡ Stone and Douglas, 'Brain,' 1902.

§ C. J. Thomas, 'Ophthalmic Review,' August, 1905.

|| Hinshelwood, 'Brit. Med. Journ.,' November the 2nd, 1907.

are quite beyond her power. She cannot remember words that have been pointed out to her but the moment before, and either makes the wildest guesses or else lapses into frightened silence. She is unable also to give the pronunciation of a word the letters of which are spelled over to her, a possible indication that in her case the auditory centre shares in the defect of the visual. Although to this degree alexia is well marked, she can readily appreciate the meaning of coloured pictures.

She is said to be, for her age, smart at figures, and certainly so far as I have tested her appears to know something of the multiplication table, though not much about the addition of sums of money. Her relatives have transferred her from one school she used to attend to another, as the teacher she had been under before had not appreciated her limitations and had ridiculed her before the other children. At present, instead of being in Standard III along with the other children of her own age, she is in the first standard along with children of six years and upwards. The visual acuity is good; it was not considered necessary to have an examination of the fundi made.

Her school teacher, whom I interviewed, told me that she considered the child to be up to the average of the rest of the class in which she is—but not of her age—in arithmetic, in her handwriting, and in her general intelligence, being only markedly deficient so far as reading is concerned. Her reading in class is absolute nonsense, as she puts into the piece all sorts of words apparently for the sake of saying something rather than standing silent. Her teacher said that she believed the child to be possessed of pretty fair common sense; she is neat in her person, has a good idea of colour, and is able to draw and paint crudely to copy just about as well as can the other children in the class. The child is able to write to copy, but not to dictation. One morning her class was set a dictation of only twenty simple words forming a complete sentence (words such as *dream*, *tale*, etc.), and was given ten minutes of preparation for it; at the end of that time when the piece was dictated she had no less than ten of them wrong.

Her teacher compared her deficiency in this direction to that of a boy whom she had formerly taught, who had a general lack of intelligence, being an incorrigible dunce in every subject, and whose brother is a congenital imbecile. It is significant that while talking to me about this girl she used the word stubborn with regard to her, at once correcting herself however, and for my benefit replacing it by the word stupid.

The teacher was good enough to offer to procure for me an old school-exercise book of the child's so that from it I might be able to see for myself what she achieved in the various departments of school work. The headmaster of the school got wind of this however, and, considering his dignity to have been compromised in that I had not gone to him direct in the first instance, put his foot down, refusing to allow the book—which was about to have been destroyed in a batch of other rubbish in the furnace—to leave the premises. As I was at the time on the eve of leaving the district permanently I never had any opportunity of seeing this important personage about the matter, and had to drop all idea of examining specimens of her actual school work.

A younger sister, who is six years old, can read fairly well for her age. Both these children are alike nervous and easily frightened. They have yellow hair and pale, foolish faces, but neither of them is albinoid. They are certainly not either idiotic or imbecile—such is not the reason for the illiteracy of the elder child.

The full details of the family history are of the greatest interest, and were not obtained without considerable difficulty and the exercise of much patience. Her parents and grandparents are quite illiterate, and she and her sister are the two youngest out of a family of five children—all illegitimate. Of these five children the first two were born prematurely and both died in fits, one when five months old, the other at the age of fourteen weeks. The third child died when eleven weeks old of what was described as croup, but which, in the light of this history, may quite possibly have been either laryngeal spasm or rapidly fatal œdema glottidis from a laryngeal neurosis, such as older writers used to term “internal convulsions.” Their mother has been asthmatic for years, and has recently developed hepatic cirrhosis (without, however, any definite indication of its being of syphilitic origin). Some years ago she was operated on for a pedunculated cancer of the thigh; she also has a parenchymatous goitre, of the existence of which she was totally unaware. She is an only child and is herself illegitimate; by the time she was twenty-five she had had no less than three illegitimate children of her own and they were all dead.

The grandmother has no goitre, but has a tumour in the region of the right parotid strongly suggestive of a sarcomatous growth, and her mother's sister is said to have a similar tumour in the same situation. The maternal great-grandmother had a huge pendulous goitre hanging down like a bag over the front of her chest. She was a woman who had had fifteen children (of whom apparently

three were stillborn, but of this I cannot be certain) and who died at the age of forty-seven years. The goitre seems to have originated when she was about thirty years of age, and her daughter distinctly remembers that it got larger every time she had a child. Her husband had a brother, vaguely described as "a bad lot," who, though a labouring man, died leaving £4500 to be divided among his three sons—if such a detail as this be worth recording.

Of the family of fifteen mentioned above, the eldest died in childhood in consequence of a nail having impacted in his throat while he was amusing himself in the pleasant and childlike recreation of making a little coffin for his baby sister. Another is the father of a diabetic son. Still another, the third child, is an inspector of police, and has been entrusted with many special missions, such as the extradition of criminals from abroad, and has been mentioned in the newspapers for a gallant rescue from a burning building. The youngest but one is a confirmed alcoholic (and was described as being "an awful swearer"); I have seen him several times and there is no doubt whatever that he is weak-minded; he it is who is the father of the girl who has word-blindness and of her brothers and sisters: in other words, he is their mother's uncle.

The particulars of this parentage I have had confirmed for me in certain of its details by a medical man who has known the family for some twenty years.

A more perfect example could hardly be wished for to illustrate the effect of defective hereditary material in the causation of dyslexia congenita, and to prove that the cerebral lesion, or localised aplasia as it probably is in these cases, may depend on a cause actually antecedent to the first cell divisions of the fertilised ovum. That the relatives exhibited varying degenerative manifestations and that some of them may have been in their own way quite estimable members of the community is not to be wondered at; a family tottering to its fall not infrequently—to borrow an expression used by the stock-breeder—"throws" variants from the common stem now to one side and now to the other, and the well-known view of Lombroso may be referred to, that genius (in certain cases) may be taken as the product of a rotten stock, "a true degenerative psychosis" as it has been phrased.

The condition is thus seen to be of the nature of a reversion to the pre-civilised type as the result of loss or destruction of certain of the later and more highly specialised determinants in the gametic idioplasm, and as such it falls in line with many other of the phenomena of atavism. It is entirely different from those examples

of dyslexia recorded by Berlin,* by Hinshelwood† and by others in which there was rapid exhaustion of the cerebral centres for words on consecutive effort, resembling the muscular fatigue that occurs in myasthenia gravis or in intermittent claudication of the lower limbs, and like these conditions apparently in some cases of toxic origin or due to vascular sclerosis, leading to anæmia of the sensory centre, with the consequent rapid exhaustion on even slight increase of metabolic activity.

The memories of visual concepts of objects are stored as impressionist pictures in the brain. By education the laborious processes of visual sensation, comparison with the previously stored images in the cortex and psychical recognition are made easier, and are carried on almost with the automatic rapidity of reflex action. In cases of congenital word-blindness even after prolonged training all the laborious steps of the process have to be carried out one by one with such visible effort that one might almost think the mental machinery were creaking under the strain. The words never come to be vested with significance in virtue of their shape and the general appearance they present to the eye.

DELAYED CHLOROFORM POISONING.

By J. BOYD BARRETT, M.B., B.Ch.,

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THIS unfortunate condition, resulting in death after sixteen days' illness, occurred in a case for which I recently did a minor plastic operation. The child, a girl, aged $2\frac{1}{2}$ years, had some months previously fallen backwards on the fire-place. As a result of the burn the nates were bound together by a band of cicatricial tissue, and the child was operated on for the relief of this adhesion.

The operation, chloroform being the anæsthetic used, lasted about fifteen to twenty minutes. It is necessary to mention that when the wound was being dressed on the second day after the operation the child screamed so much and was so refractory that it was given a few whiffs of chloroform, which caused only partial anæsthesia.

It was noticed before the operation that the child had the

* Berlin, 'Eine Besondere Art der Wortblindheit (Dyslexia),' 1887.

† Hinshelwood, 'Letter-, Word- and Mind-blindness,' ch. iii, 1900.

appearance described as "pre-tubercular." The face was flushed, the eyelashes were long, dilated veins were seen on the chest, and some patches of erythema about the shoulders.

On the third day after the operation the child was restless and feverish. She vomited several times during the day and the following night. The bowels were confined.

The vomiting continued during the fourth day. It might be described as persistent. The temperature often reached 102° F., and the child was evidently extremely ill. There were no physical signs present, and the usual treatment for gastritis was carried out.

On the fifth day the vomiting continued, and the condition was aggravated. There were no physical signs to account for the condition. Delayed chloroform poisoning was then suspected, and on the urine being examined, acetone, diacetic acid, and a trace of albumin were discovered.

The utmost measures were taken for the treatment of the condition. Half a drachm of bicarbonate of soda was given every four hours. Saline injections and nutrient enemata were given when thought necessary, and later in the illness transfusions of glucose. The bowels were kept free, and the child was dipped in a warm bath every day and wrapped in blankets. The latter measure had to be stopped as it was too weakening.

In the last week of the illness "air hunger" was well marked, and the child lapsed into a state of semi-unconsciousness. The vomiting occurred seldom. The child wasted much and was evidently dying. During the last five days the faeces became clay-coloured, showing a condition of acholia, due, no doubt, to fatty infiltration of the liver. The pulse at the end had become irregular, and a similar condition in the heart was suspected.

Taurocholate of soda and sulpho-carbolate of soda were given as hepatic stimulants, but no beneficial effects could be traced to their action.

The condition became worse. Delirium was present, and the case at the close resembled one of tubercular meningitis. The treatment was continued without cessation to the last. Bicarbonate of soda in large doses was given in injections and transfusions. It became impossible to give food by the mouth. Brandy was also used.

Some days before death the urine was again examined. Acetone and diacetic acid were present, one in increased amount. The end came quietly on the sixteenth day after the operation.

The child lived an unusually long time, and knowing that cases

of recovery have been reported the treatment was persisted in to the end, and at times the possibility of cure was thought of.

Unfortunately no post-mortem was permitted, but from the condition of the urine, the character of the pulse, and the colour of the fæces, there can be little doubt but that the case was one of delayed chloroform poisoning, resulting in fatty infiltration of the heart, liver, and kidneys, ending, as it usually does, in death.

THE CREMASTERIC REFLEX.

By EDRED M. CORNER, M.C., F.R.C.S.,

Surgeon to the Children's Hospital, Great Ormond Street, and to St. Thomas's Hospital, in charge of Out-patients.

A REFLEX act consists of the contraction of a muscle or group of muscles in response to a sensory stimulus, and the elements necessary for its production are an afferent nerve, a centre, and an efferent nerve; the whole being called a reflex arc. The cremasteric reflex is the retraction of the testicle on stimulating the inner and upper aspect of the thigh. It is a type of the superficial reflexes which are caused by stimulating the superficial nerves of the skin. The afferent and efferent nerves for its production are in the trunks of the first and second lumbar nerves; and the "centre" is in the lumbar enlargement of the spinal cord. Comparatively little is known of the natural history of this reflex, yet a little clinical experience showed that it was sometimes present, sometimes absent, and possessed many variations. In order to gain more definite knowledge it was investigated in some 300 cases, aid in the work being given by Drs. Irving Pinches and R. E. Whitting, my clinical assistants at Great Ormond Street during that period. The conditions found in about 100 adults attending St. Thomas's Hospital concluded the investigation. In this way some knowledge of the natural history of the reflex has been collected.

The subject will be considered under the following headings:

I. The physiological history.

II. (A) Its methods of production.

(B) The variations in the results produced.

III. The inguinal reflex of girls.

IV. The clinical characters.

I.

The life-history of the cremasteric reflex is full of interest. In the first place, it is natural to expect its presence to be found in the male subject alone. This is not quite true; a corresponding inguinal reflex can be obtained in girls, particularly about the ages of seven to twelve. From that date onwards it slowly recedes and cannot be found in every woman.

The cremasteric reflex is not present at birth but makes its appearance in the second year of life. There is considerable individual variation in this, the reflex act appearing in the second three months of life, or, as in the case of defective mental development, it was not present at eight years of age. The rapid acquisition of the reflex would seem to entertain a precocious nervous, not sexual, development. Its slow acquisition would indicate either a slow nervous development or the presence of some general or local disease. When it has once appeared the reflex rapidly becomes brisk, perhaps so brisk that the testicle, which was originally in the scrotum, ascends and appears to be imperfectly descended. An abnormally brisk cremasteric reflex is the cause of the apparent imperfect descent, occasional disappearances, and the great mobility of testicle often seen in young boys. From the ages of about eight to twelve it is quite common for the reflex to become more sluggish and feeble, which condition I would correlate with the exhaustion of commencing education or, perhaps, with the habit of masturbation. With the onset of puberty the cremasteric act returns to something like its former power and extent but never to the same degree as it is present in boys about six or seven. Later in life it becomes lost again.

II. VARIATIONS IN THE CREMASTERIC REFLEX.

A. *Variations in its production.*—It is usually produced by sharply stroking the inner and upper part of the thigh, the popular professional idea being that the afferent stimulus is conveyed to the lumbar centre by the crural branch and the efferent impulse by the genital branch of the genito-crural nerve. But this is not so.

In some cases a cremasteric reflex may be produced in a variety of ways. It may be produced by stimulating the crural branch of the genito-crural nerve, branches of the internal cutaneous nerve, of the middle cutaneous nerve, occasionally of the external cutaneous nerve, frequently by stimulating nerves supplying the inguinal region

or the side of the abdomen, sometimes stimulation of the perinæum and anal region. Stimulation of the prepuce and skin of the penis may produce a reflex.

B. *Variations in the reflex action produced.*—As a general rule movement of the testicle of the side stroked is the result of the stimulus. But it is not at all infrequent to find that there is unequal bilateral response, the testicle of the opposite side being drawn up to a lesser extent than that of the side stimulated. There may be, but less frequently, an equal bilateral response; and yet again, but still more infrequently, unilateral response of the testicle of the opposite side to which the stimulus was applied. There is quite a frequent variation of the cremasteric response which is quite comprehensible. The cremaster muscle is derived from the internal oblique muscle. So that when the former muscle responds to a stimulus, the efferent impulse overflows the innervation paths of the cremaster, producing in addition a contraction of the internal oblique, probably also of the transversalis in the inguinal region. Or at other times there may be a general contraction of the abdominal muscles of the same side. Thus the cremasteric reflex becomes part and parcel of the abdominal reflex. This is well shown by the cremasteric response often being demonstrable if the skin of the lower abdomen is stimulated. Equal and unequal cremasteric responses are seen from time to time, but a crossed cremasteric response to abdominal stimulation has never been seen. Similar responses have been seen in the inguinal reflex of girls. So that the inguinal, cremasteric, and abdominal reflexes are bound up together in their physiological and pathological responses, as would be expected from the anatomical development of the regions.

In what has been written, stimulation of the upper and inner part of one thigh has been regarded as the sole stimulus. When this is so, as a general rule, unilateral responses on the same side are obtained. But if areas, such as the skin of the perinæum, the anal region, the penis or prepuce, are stimulated the response of the testicles is usually equal and bilateral. All bilateral responses, particularly when combined with inguinal and abdominal responses, are best seen in boys of six or seven, in whom the reflex is very brisk. Stimulation of the scrotum itself may produce a unilateral or bilateral cremasteric response.

C. *The summation of the cremasteric responses.*—When the reflex is brisk it is possible to retain the testicle in the groin by repeated applications of the stimulus. The repetition of the afferent impulse causes a repetition of the efferent impulse, which prevents the relaxa-

tion of the cremasteric contraction. The early repetition of the stimulus increases the cremasteric contraction. Later the efferent impulses can no longer do this, but merely retain the testicle in its raised position by maintaining the contraction of the cremaster. Later still both the muscle and the centre become fatigued, the muscle gradually relaxing and the centre failing to respond to afferent stimuli. Both the muscle and centre recover their irritability quickly in a healthy subject, but are slower to do so in the debilitated and weakly.

There is a further corollary of this physiological summation of the cremasteric reflex. In some children the cremaster muscle is found in a state of tonic contraction, the testicles being in consequence imperfectly descended. Our knowledge of these cases is not great at the present moment. It would appear that this tonic reflex contraction, as it is called, may be produced in two ways—reflex and automatic.

(a) *The reflex*.—This is dependent upon the habitual summation of afferent stimuli, which arise from the habitual stimulation of the thighs, lower abdomen, and the genitalia by the clothes. Practically, testicles may descend or appear from the abdomen if the child is protected from such stimuli, as by lying naked in bed with a fracture-cradle supporting the clothes. I have known testicles discovered in this way which were thought to be irretrievably retained in the abdomen or very high in the inguinal canal. Great care must be taken in making the examination to prevent the reascent of the testicle from a reflex contraction of the cremaster excited by the examination.

Another fact which may be regarded as evidence in favour of this habitual summation of afferent impulses is that when such impulses are prevented, as by an anæsthetic and exposure before an operation, the testicles may be found in the scrotum for the first time.

(b) *The automatic*.—This is dependent either on the action of the brain and higher centres or on the lumbar centres originating efferent cremasteric impulses on its own account. It is difficult to produce evidence in favour of this contention and to exclude the possibility of the summation of afferent impulses by an excitable lumbar centre. But I would point to three possible sources of evidence of automatic action of the lumbar centre :

(1) With extreme excitability of the lumbar centre, as found in some cases of enuresis, the testicles are found retracted and almost incapable of responding to stimulation of the thigh.

(2) The association of retracted testicles in the scrotum of the healthy.

(3) The retraction of the testicles in sexual excitement.

In the two last instances the maintenance of the retraction is in all probability from the central nervous system.

III.

It has been found that there is a reflex which corresponds to the cremasteric reflex of boys. The cremaster muscle is derived from the lower fibres of the internal oblique in the inguinal canal. In girls a reflex contraction of these lower fibres of the internal oblique muscle can be produced by stimulating the thigh, lower abdomen or external genitalia, as in exciting a cremasteric reflex in boys. I would suggest the name, an "inguinal reflex." It is similar in its life-history to the cremasteric reflex in boys. It is absent in baby girls, appearing in the second or third year of life; it is often very brisk in girls of six to eight years of age and disappears shortly after puberty, when it becomes merged into the reflex contraction of the lower abdomen. There are unilateral, equal and unequal bilateral and crossed responses, just as has been detailed in connection with the cremasteric reflex. A summation of the inguinal reflex and its fatigue were seen, but nothing in the shape of a tonic reflex or automatic inguinal response was found. Clinically the inguinal reflex was raised by health and disease in a way similar to that in which the cremasteric reflex was. But no relation was observed between any condition of the ovary and the character of the inguinal reflex, such as was found between the testicle and the cremasteric reflex. This statement is in reality no more than an acknowledgment of the ignorance of the condition of the ovary in young girls.

IV.

The character and condition of the cremasteric reflex is of some practical importance apart from its possibilities in medical diagnosis. And the general results of a number of observations will be mentioned. A great number of these observations were made at Cromwell House, Highgate, a hospital for convalescent cases from the Children's Hospital, Great Ormond Street, whilst holding the office of visiting surgical officer for five consecutive years, during which time I saw a large number of cases. The general remarks for the practical guidance will be given in tabular form.

(1) The reflex is best in healthy children. It is weakened or abolished in ill-health. It has therefore some value in detecting or in confirming the detection of malingering children.

(2) Any general disease will weaken or abolish this reflex.

(3) Rickets is a disease peculiar to children, and as it takes some months for the bony changes to become apparent, during which time the disease is active, special attention was paid to this stage of the disease, and it was found that in the early stage of rickets the cremasteric reflex was much weakened and often abolished.

(4) All operations on the inguinal canal temporarily abolished this reflex. In a wound of the operation for the radical cure of a hernia the healing of the skin is seen, but we know nothing of the "healing" of the *deeper* parts. I would suggest that the clinical character of the cremasteric reflex may help. The following suggestions are made for practical guidance.

(i) In all cases the reflex is temporarily abolished.

(ii) If the wound suppurates, it is abolished for longer than if the wound heals by first intention.

(iii) The reflex is abolished for a longer time (*a*) if the whole hernia sac is stripped up and removed, instead of being divided and only the proximal part removed, (*b*) if the inguinal canal is sutured; (*c*) if the spermatic cord is transplanted as in Halstead's operation, or if it is raised as in Bassini's operation; than it is if the internal abdominal ring is sown up over the cord as in Fergusson's (or Foster's) operation. Should only the sac be removed as advocated by Mr. Hamilton Russell of Melbourne and Mr. R. W. Murray of Liverpool, the reflex is abolished for only a few days.

(iv) If the inguinal canal has been sewn up, it may be formulated that—(*a*) if the reflex returns in ten days or a fortnight some of the stitches in the canal have not held; (*b*) if the reflex is abolished for more than four weeks, the wound healing by first intention, the spermatic cord has been injured, or there is deep suppuration; (*c*) if the reflex returns two or three weeks after the operation its return is about normal.

These conclusions would doubtless require modification with further observations. A parallel condition may be pointed out—the influence of coeliotomies of the abdominal reflex. I have made a number of observations on these, and have noticed some points which bear out some of the statements made about the cremasteric reflex. For example, the reflex returns more quickly if the wound heals *per primam* than if it suppurates. It also returns more quickly after "fibre-splitting" operations such as the paramuscular

incision of McBurney for removing the appendix, than after those in which the muscles are cut or injured. It also returns more quickly if the inflammatory products of the repair of the wound are removed by massage than if they are merely left for absorption.

The operation for varicocele, if performed early enough, seems to have a far more reaching effect in abolishing the cremasteric reflex than has the operation for the radical cure of a hernia. Such a result would be expected, as in the former the spermatic cord is injured whilst in the latter it is not.

A sufficient number of observations have not been made on such cases to warrant further generalisations.

(v) Incontinence of urine—enuresis—is in some cases caused by, and in many cases accompanied by, a superlative excitability of the lumbar centres. In such cases the testicles may be tonically retracted and incapable of responding to a cremasteric reflex. In other cases the condition may be dependent on worms, alimentary disturbances, bad habits, rickets, etc., when the testicles may be dependent and capable of response (or not) to a cremaster reflex.

(vi) It is sometimes a question of diagnosis and of importance in prognosis and treatment to decide if the imperfect descent of the testicle is due to—(a) lack of developmental capital, when the reflex is weak or absent; (b) to some mechanical obstruction, when the reflex is strong; (c) or associated with the condition of movable testicle, arising from an abnormally brisk reflex dependent on the summation of stimuli or on a tonic contraction of automatic origin. In such cases there may be no cremasteric reflex. They may be only separable from class (a) by careful observation and the avoidance of stimuli, as by lying in bed with the clothes raised by a cradle.

(vii) A movable testicle is dependent on (a) imperfect development of the testicle with a long mesorchium; (b) the imperfect descent of such a testicle in (a); (c) a summation of stimuli with a brisk cremasteric reflex; (d) a tonic cremasteric contraction of probable automatic origin. These questions are of practical importance, because in (a) and (b) the prognosis is very different to what it is in (c) and (d). Then the treatment is different in (c) to what it is in (d).

(viii) In older children and young adults it is of practical importance to note the relation between the condition of the scrotum and the character of the cremasteric reflex. In babies and young children the scrotum is thin. As puberty approaches a layer or collection of involuntary muscular fibres appear in the subcutaneous

tissue, the scrotum being thicker and, at the same time, being capable of contraction and relaxation. In healthy, active conditions the scrotum is contracted and rugose, with retracted testicles. In such cases, owing to the position of the testicles, there is little scope left for a cremasteric reflex action. This is the condition in vigorous, healthy adults. In disease, sickness, and nervous conditions, the scrotum is often smooth and lax, with pendulous testicles. In such cases there may be a feeble cremasteric reflex retained. The contracted scrotum is dry, the lax scrotum usually moist.

(ix) The presence of a varicocele always hampers a cremasteric reflex. But as the cremasteric reflex tends to disappear as the contracted scrotum of puberty develops, it follows that the reflex often ends before the varicocele begins. But a varicocele produces a lax scrotum and pendulous testicle, a condition in which a small reflex cremasteric contraction can be generally demonstrated.

(x) An inguinal reflex, comparable to that of young girls, can be found in males in whom the testicle is retained in the abdomen. It has some practical value, as if the testicle cannot be found it is either a movable testicle or an imperfectly descended testicle; in the former case there may be no inguinal but a cremasteric reflex; in the latter it is present with an abdominal testicle.

(xi) In spastic conditions the cremasteric reflex, curiously enough, seems sometimes unaffected. But sometimes the testicles are retracted by tonic contraction of the muscles.

A CASE OF SPONTANEOUS INTRA-CYSTIC HÆMORRHAGE INTO A CYSTIC HYGROMA OF THE NECK IN AN INFANT; OPERATION.

By C. HAMILTON WHITEFORD, M.R.C.S., L.R.C.P.

WHEN fourteen days old the infant, a female, was noticed by the mother to have a swelling under the tongue and another swelling in the left side of the neck. When first seen, at the age of six weeks, there was under the left half of the tongue a ranula-like swelling, which raised the floor of the mouth $\frac{1}{4}$ inch higher than the other side. There was also an elastic swelling in the neck below the angle of the left jaw.

The mother asked for immediate operation, and was told to

wait until the child was older and stronger, unless respiration or swallowing should become interfered with. During the next fifteen months the hygroma increased in size only in proportion to the growth of the child. At the age of one year and five months the cervical tumour suddenly enlarged to the size of a lawn tennis ball and became in parts very tense. The child developed a cough and had difficulty in swallowing.

Diagnosis.—Hæmorrhage into some of the cysts.

Operation.—Through a curved $3\frac{1}{2}$ -inch skin incision with its concavity upwards, extending from the left angle of the jaw to the middle line of the neck.

The larger cysts were full of extravasated blood. The smaller cysts contained clear straw-coloured fluid.

A mass of collapsed cysts and connective tissue, measuring $1\frac{1}{2}$ by 1 by 1 inches, was dissected out, freely exposing the bifurcation of the carotid artery. Innumerable blood-vessels running in the connective tissue between the cysts required ligation. Several large veins, including the facial, external and internal jugular, were also tied.

The inner and outer thirds of the skin incision were sutured, and through the middle third the cavity was packed with gauze.

At the end of a week domestic reasons compelled the mother to take the child home. The neck was then healed except for a small sinus in the centre of the scar which discharged a little clear cystic fluid. Five days later the child was brought back with an acute brawny and œdematous infection of the neck, which necessitated opening up the whole scar and the making of several counter-openings. After nearly dying, the child, thanks to good nursing, recovered.

Seen a year later, in August, 1909, *i. e.* at the age of 2 years and 5 months, the child was in good health, the swelling beneath the tongue was somewhat more prominent, with the neck swelling projecting only slightly, and the scar, owing to its position and the fatness of the child, comparatively inconspicuous.

The swelling in the mouth, which at present interferes neither with respiration, deglutition, nor articulation, will need treatment at some later date, when the scar in the neck can be reduced to a linear cicatrix.

A CASE OF ANTERIOR POLIOMYELITIS LIMITED TO THE
LOWER DORSAL REGION, AND GIVING AS ITS
MOST PROMINENT SYMPTOM PARALYSIS OF THE
ABDOMINAL MUSCLES ON BOTH SIDES.

By C. P. LAPAGE, M.D., M.R.C.P.,

Physician to the Manchester Children's Hospital, Pendlebury.

N. H—, a well-nourished boy, aged 9 years, was admitted to the Manchester Children's Hospital, Pendlebury, on June the 16th, 1909. There was nothing of note in the family history or the medical history previous to the present illness, which began eighteen months ago, when the child was suddenly taken ill with listlessness, anorexia, and constipation, but no pain; he was unable to sit up, the right leg seemed weak, and just at this time his neck was swollen on both sides.

Twelve weeks after the onset of the illness, when I first saw the boy, who was then under the care of the late Dr. Ashby, he was very weak and unable to raise himself into a sitting posture; but the most striking symptom was the ballooning of the abdomen, combined with a falling-in of the lower part of the chest-wall, and a general kyphosis of the dorsal region of the spine. When his shoulders were held the boy could correct these deformities, which were evidently due to paralysis of the abdominal muscles, the lower intercostals, and part of the erector spinæ. The limbs were normal, and no other lesion could be demonstrated.

The boy was admitted to hospital, and the notes taken by the house-physician, Dr. T. M. Bride, show that the limb reflexes and the cremasteric reflexes were normal, but that the superficial abdominal reflexes were lost. The other systems were normal, and there was no spinal caries. The abdominal muscles did not react to the Faradic current, and constipation was an obstinate and a troublesome symptom. Neither palatal nor eye-muscle paralysis was present. The boy was discharged after having been fitted with a poroplastic jacket.

In June of this year the boy was again admitted to hospital, and his present condition is as follows: The abdominal muscles are completely paralysed except for two narrow bands about one eighth inch in width, stretching, one from the tenth rib on the left to the umbilicus, and the other from the umbilicus to Poupart's ligament on the right. These bands show marked fibrillary contractions and

are very excitable. During respiration the abdomen balloons out above and below these narrow strips of unparalysed muscle, and the lower part of the chest-wall is depressed. The lower three or four intercostal muscles are also paralysed. The erector spinæ over the lower dorsal and upper lumbar regions is much wasted, causing the spines of the vertebræ to stand out prominently, so much so that the possibility of spinal caries was suggested, but the spine is quite flexible. The electrical reactions show that the affected muscles, except for the narrow strips mentioned above, are inexcitable to either current. The lower limbs are normal, but the psoas muscles on each side are hypertrophied, and, when the patient is struggling into a sitting posture, these muscles can be felt as large, tense bands in each iliac fossa. The superficial abdominal reflexes are absent except for the response on the left side due to the over-excitable strip of unparalysed muscle, the cremasteric reflexes are active, and the limb reflexes are normal. There is no anæsthesia. Constipation is still a marked symptom. The child is able to walk about fairly well and is quite comfortable in a spinal jacket, but he is only able to raise himself from a recumbent to a sitting position with great difficulty, and when he stands up the abdomen is prominent, with the chest-wall much sunken and depressed in front.

The case is of interest because the disease picked out and was limited to the lower dorsal region, producing paralyses that are rarely seen. The only other part affected was the right leg, which was said to be weak at the onset of the illness, but was so only for a short time and is now normal. The swelling of the neck early on in the illness may have been diphtheritic, but there were no eye or palatal symptoms, nor any other signs pointing to peripheral neuritis.

Fowler ('Medical Press and Circular,' January the 3rd, 1906) reports a case of unilateral paralysis of the abdominal muscles combined with paralysis of the limbs, and, amongst other references, quotes a case of Ibrahim's ('Deutsche Zeitschrift f. Nervenheilkunde,' 1905, Bd. xxviii, Heft 1-2), where there was double paralysis of the abdominal muscles. Most text-books give no reference to infantile paralysis of the abdominal muscles, nor to its striking characteristics, but dismiss it under a reference to paralysis of the trunk muscles.

Editorial.

SECRET REMEDIES.

THE British Medical Association has done a great service to the public and the medical profession by having undertaken the analysis of many of the more common secret remedies which are so widely used. The results of this analysis are contained in a small book which has just been published by the Association, entitled 'Secret Remedies: What they Cost, and What they Contain.' Not only has an analysis been made of each patent or secret remedy, but also the statements of its wonderful action, etc., by the vendors have been reproduced, so that the book gives most entertaining reading, especially to a medical practitioner.

The chapter which deals with the analysis of the various "soothing, teething, and cooling powders for infants" is of considerable interest to those who are especially associated with the treatment of the ailments of childhood. It seems that proprietary infants' powders, although they are not many in number, are very widely advertised and sold in large quantities. We are glad to see that in the four powders analysed morphine was not detected in any of them. It seems, however, probable that in many of the other infants' powders which are not so popularly used this alkaloid is often an important ingredient. The analysis of the four powders is here given.

Stedman's Teething Powders.—The average weight of each powder is 2·4 grains, and the analysis showed that it was composed of calomel 29 per cent. and sugar of milk 71 per cent. There was a trace of an alkaloid present, which did not appear to be morphine, and as it was in minute quantities, only 0·016 per cent., or $\frac{1}{2500}$ grain in each powder, it was extremely difficult of identification. An alkaloid in such small quantities could have very little effect, either beneficial or otherwise, so its presence need not be taken into consideration. The powders in a 4s. 6d. box numbered sixty, and contained materials which, on referring to an ordinary wholesale drug list, could very fairly be submitted to cost about one third of a penny.

Steedman's Soothing Powders.—The powders weighed on an average 2·8 grains each, but varied considerably from 1·9 to 4·5 grains. The analysis showed the powder to be composed of calomel 27 per cent., sugar 22 per cent., maize starch 50·5 per cent., and ash 0·5 per cent. An alkaloid was again found to be present, but in even less quantity than in Stedman's teething powders. The dose was: one to three months, a third of a powder; three to six months, half a powder; and after six months one powder only and no more. The ingredients of a 2s. 9d. packet, which contained twenty-four powders, were estimated to cost about one eighth of a penny.

Pritchard's Teething and Fever Powders.—The average weight of the powders was 2·1 grains. Upon analysis the following ingredients were found: calomel 47 per cent., antimony oxide 0·7 per cent., calcium phosphate 1·4 per cent., and sugar of milk 50·9 per cent. There was no trace of an alkaloid. The dose to be given was arranged according to age as in Steedman's powders. The ingredients of a 1s. 1½d. box, which contained sixteen powders, were estimated to cost about one ninth of a penny.

Fenning's Children's Cooling Powders.—The average weight of the powders was 3·4 grains, and the analysis showed that they consisted of potassium chlorate 70 per cent. and powdered liquorice 30 per cent. The circular enclosed with the box described the powders as "the best medicine for infants cutting their teeth, preventing convulsions, thrush, disordered bowels, and for all the feverish diseases of infants and children." A 2s. 9d. box, holding forty-eight powders, was estimated to contain ingredients of the value of about one sixth of a penny.

These powders are widely used by ignorant mothers of the poorer classes, but now that in the large cities there are health visitors who call to see the mothers of newly born babies with the object of educating them in the right way to look after their offspring, we expect to find that these unfortunate infants will not be so often promiscuously dosed with quack nostrums whenever there is some digestive trouble, brought about, as is usually the case, by improper feeding or uncleanly habits. Many children of this class are not brought to a medical adviser until various kinds of soothing or teething powders have been experimented with for some days.

The Royal Society of Medicine.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

Friday, October the 22nd, 1909.

Dr. G. A. SUTHERLAND in the Chair.

Two Cases of Anterior Poliomyelitis involving the Four Limbs were shown by Dr. A. MANUEL. The first was a child, aged 1 year and 8 months, in whom the condition developed suddenly after a slight injury. The child's temperature when brought to the hospital was 100° F., and all four limbs were paralysed. Some improvement had occurred in the arms since the child was admitted. The second case was a child, aged 1 year, in whom the condition resulted from a sudden illness on August the 15th; considerable recovery in the arms had already occurred, but there was still complete paralysis of all the extensors of the foot and leg.

A Case of Extra-Capsular Fracture of the Neck of the Femur in a boy, aged 6 years, was shown by Mr. RALPH THOMPSON. The injury had resulted from a fall. The diagnosis was at first very obscure, but a skiagraph revealed the true nature of the injury. The case had been treated by extension and Thomas's hip splint.

Mr. MUMMERY said that this injury was very seldom diagnosed in children, but some of the cases of obscure deformity of the hip-joint were very possibly due to a similar injury.

A Case of Congenital Hemi-dystrophy was shown for Mr. HOWELL EVANS by Dr. HIGGS. The patient was a child aged 1 year and 10 months. When only a month old it was noticed that the left side of the tongue was larger than the right, and later that there was asymmetry of the abdomen. At the present time a marked difference can be observed between the sizes of the two sides of the body. It was pointed out that the condition in this case was progressive.

Dr. PARKES WEBER regarded the case as one of hemi-hypertrophy of muscular origin.

Mr. LOCKHART MUMMERY reminded the Section of a similar case which he showed two years previously. He considered the condition as being a progressive one and likely to lead to great deformity.

A Case of Chloroma was shown by Dr. ESSEX WYNTER. The patient was a female, aged 3½ years, showing very marked facial deformity, which had been noticed since the middle of May. The face is unusually large and bony, with shiny, tense skin over the malar bones, and marked exophthalmia, especially on the right side. The glands about the neck were enlarged. The blood-count showed red corpuscles 3,630,000, white 30,000, hæmoglobin 56 per cent., and lymphocytes 66·2 per cent.

The CHAIRMAN said that he assumed that secondary tumours of the suprarenal capsule could be excluded.

Dr. WHIPHAM asked where the growths commenced, and Dr. LANGMEAD whether the diagnosis from lymphatic leukaemia had been gone into.

Dr. SPRIGGS mentioned a similar case of his own, and said that he was not convinced by the blood-count.

Mr. SYDNEY STEPHENSON recalled a case in which the child was suffering from secondary deposit from supra-renal sarcoma.

A Case for Diagnosis was shown by Mr. LOCKHART MUMMERY. The patient was a boy, aged $6\frac{1}{2}$ years, with a spastic gait and very marked contraction of both tendo Achillis. He was only able to walk on the tips of his toes.

Dr. SPRIGGS referred to a similar case which had been regarded as one of hypertonía.

Dr. JEWSEBURY pointed out that the case might be one of diplegia, as there were well-marked knee-jerks and Babinski's sign was obtainable.

Dr. HIGGS regarded the case as one of spastic paraplegia.

Dr. SUTHERLAND pointed out that there should be in that case some mental defect.

Mr. MUMMERY, in reply, said that there was no evidence of any mental defect.

A Communication entitled "Notes on the Pathology of some Liver Conditions in Childhood, with a Report of three Cases" was made by Dr. A. DINGWALL-FORDYCE. The first case was that of a child, aged 7 years, with subacute yellow atrophy of the liver. A year ago the child had an attack of jaundice, and since then had complained of pain in the left side of the abdomen. Seven weeks before death the child began to look ill, and the abdomen was noticed to be swelling. There was diarrhoea and vomiting, œdema of the back, paresis of the left leg and left side of the face, and a squint. Temperature 99° F., pulse 144. The post-mortem showed slight pleurisy and pericarditis. There was some bile-stained fluid in the peritoneal cavity. The stomach was dilated, and in the ascending colon there was an acute tuberculous ulcer. The liver was greatly reduced in size and almost flat, and its surface was irregular with well-marked yellow nodules. Microscopic examination showed yellow areas of hyperplasia and much fibrous tissue.

CASE 2 was a female, aged 8 years, who was admitted to the hospital with caries of the dorsal spine. She died of persistent vomiting a few days after admission. The post-mortem examination revealed a fatty condition of the liver, which weighed 460 grm.

CASE 3 was a male, aged 4 years and 8 months. The child was first seen on account of digestive troubles and on examination it was noticed that the liver was much enlarged. The child died after an operation which revealed malignant disease of the liver. Post-mortem examination, the liver was found to weigh $4\frac{1}{2}$ lb. and to be studded throughout with new growth. A tumour was discovered in the ileum about one foot from its lower end. The kidneys were enlarged.

A Specimen from a Case of Lympho-Sarcomatosis was shown by Dr. F. W. HIGGS. The specimen showed an appendix infiltrated with lympho-sarcoma. The kidneys also showed diffuse infiltration with lympho-sarcoma cells.

The Specimen from a Case of Acute Inflammation in an Appendix, involted into the Lumen of the Cæcum, which then formed the Apex of an Intussusception, was shown by Mr. IVOR BACK. The specimen was removed from a girl, aged 8 years, by operation, the child recovering. It showed an appendix completely involted into the cæcum and markedly inflamed. No explanation as to the origin of the condition was offered.

A Paper entitled "A Case of Pneumococcal Infection in an Infant Simulating Generalised Tuberculosis" was read by Dr. WALTER CARR. The patient was a child aged 15 months, who was admitted to hospital with an indefinite history of illness. The case was at first thought to be one of acute pneumonia, but when after several weeks the condition remained unaltered with an irregular temperature it was thought to be one of general tuberculosis. Calmette's test gave a negative result. The child died, and the autopsy revealed no trace of tubercle but a general pneumococcal infection. There was well-marked pericarditis. The right lung was universally adherent and the upper lobe showed old unresolved pneumonia; the left lung was also adherent. The peritoneal cavity contained about a pint of semi-purulent fluid.

Dr. SUTHERLAND said he regarded the case as a very unusual one.

Philadelphia Pediatric Society.

REGULAR Meeting, October the 12th, 1909, J. CLAXTON GITTINGS, M.D., President.

Pica in a Mental Defective.—Dr. E. F. CORSON, by invitation, showed a girl, aged 33 months, who at three months had fallen, striking her head so severely that she was unconscious several minutes and remained stupid some days. At eighteen months she was apparently a normal, healthy child. Soon afterwards it was noticed that she gnawed, chewed, and swallowed matting, cloth, string, wood, pieces of the furniture, etc. When two years old she had a sudden attack of vomiting, became drowsy, and remained in a stuporous condition for several days. She has not talked well since then. Six months ago she had a series of convulsions and has never spoken since. Apparently she does not hear either. She tears to pieces anything her hands find, and swallows it all. A visit to her home showed marks made by the child as high as her mouth would reach—a sort of "high-water mark."

Dr. D. J. MCCARTHY considered this a very rare condition as the result of a mental illness. Ordinarily a perverse appetite is functional; in this case it is evidently psychic.

Three Cases of Cerebral Infantile Palsy in One Family.—Dr. C. A. FIFE showed two children and reported a third, out of a family of five children. Great grandparents and grandparents were healthy. The father is a Russian Jew, never ill, but of a nervous temperament; does not use alcohol or tobacco, and gives no venereal history. Physical examination negative. He has five brothers and sisters living and well; two others died in infancy,

cause of death unknown. The mother is a hard-working English Jewess, with a negative history except for the evidence of poor nutrition. She has five brothers and sisters, while five others died in infancy. The mother was seventeen and the father twenty-one when the first child was born; he is now eight years old and seems healthy. The second child was normal at birth, but died at sixteen months, after two months of diarrhoea, without meningitis or paralysis. Mother became excessively depressed after death of child, would not leave house, and lost fifty pounds in weight. While in this condition she became pregnant for the third time. She gives no history of disease or injury during pregnancy, but she continued to work hard. Child born at term, breech presentation, easy delivery, no complications. Child was very spastic, affecting neck, trunk, and extremities, arms extended and pronated, fingers flexed, thighs and legs flexed, but no talipes. Mother says that child made no voluntary movements of the extremities or trunk. No signs of paralysis of the cranial nerves were recognised. Deep reflexes are reported to have been "present"; no clonus. Muscular development not strikingly abnormal, but mental development decidedly retarded. Died when about one year old. Mother became more despondent. One year later one of the children shown was born, after normal pregnancy, easy labour, head presentation, without complications. This child also showed general spasticity and loss of power in extremities, affecting most markedly the flexors and adductors; decided talipes varus. Child is now sixteen months old; muscles of neck are still somewhat spastic, and there is moderate kyphosis. There is increasing power in the arms and in the first two fingers of each hand. She can move her head and hold it up, but she does not sit alone. No paralysis of sphincters.

Dr. KRAUSS reports: "Paralysis of external recti muscles; failure of pupillary reflex to light, accommodation undisturbed, slight blurring of edges of disc in each eye; vessels normal in size." No other symptoms of cranial nerve involvement except a somewhat hoarse cry. Deep reflexes slightly exaggerated. Oppenheim's eating reflex not present; Babinski's reflex present; no ankle clonus; skin reflex normal. Electric reactions normal. No sensory disturbance; no choreic or athetoid movements; no atrophy or hypertrophy of individual muscles observed; no convulsions. Possibly some mental deficiency, but the child is not idiotic. Physical development retarded; weight 14 lb.; length 70 cm.; greatest circumference of head, chest, and abdomen are respectively 44, 43, and 44 cm. Anterior fontanelle almost closed. Tuberculin test negative; urine negative; blood-count negative. The other baby is six weeks old. She is like her sister, only the spasticity and lack of power are greater, and there is no talipes. The child does not cry. In the three children the diagnosis made is cerebral infantile palsy of the diplegic type. While the aetiology is obscure, the cause must have been of pre-natal origin. Everything is negative except the malnutrition of the mother, possibly due to emotional causes. We cannot disregard the fact that two normal children were born before the mother became despondent, and all children born during the period of depression were paralysed.

Dr. McCARTHY considered these cases of Little's disease. At autopsy in such cases a very small pyramidal tract is found. This is probable due to multiple extravasating hæmorrhages into the cortex, cerebellum, and spinal cord at birth. Evidence is all against a primary sclerosis. Experimentally, in lower animals, a perversion of function of the motor cells occurs as a result of free blood in the tissues, resulting in destruction of the ganglion cells,

finally in calcification. Before birth localised hæmorrhage leads to an infiltration of the ganglion cells, degeneration and failure of development of the pyramidal tract. To show this Dr. McCarthy exhibited several specimens of new-born puppies. The talipes found in these cases is unquestionably the result of pre-natal poliomyelitis.

Dr. A. A. ESHNER said that a single case of this kind was interesting enough, but the occurrence of several similar cases in the same family was unusually interesting. In many such cases there is a history of prolonged or difficult labour, and it then seems not difficult to attribute the condition to hæmorrhage or traumatism, but in the absence of such an ætiological factor, one must think of some underlying condition in the mother as predisposing to a disorder occurring in several children. Dr. Eshner referred to a girl whom he had seen only the day before, presenting jerky, inco-ordinate movements of the head, whose brother had been under his observation several years previously with symptoms of cerebral spastic paralysis. Another brother in this family is said to have symptoms suggesting a similar affection.

Dr. D. J. M. MILLER said that infants will often exhibit symptoms of cerebral paralysis when autopsy reveals nothing macroscopically; but a microscopic examination will show diffuse meningo-encephalitis, as was found in a case under his care. This child, born by the breech, shortly after birth manifested great rigidity of limbs and retraction of head. This condition persisted; the least excitement would call forth a spastic condition. At eight months it could not hold up the head. It then acquired whooping-cough, during the paroxysms of which there would be extreme opisthotonos, which finally became almost permanent till death occurred.

Dr. FIFE repeated that there was no disease or infection in the mother which could explain the occurrence of these cases; nor was labour difficult or precipitate. The first two children were normal, born before any nervous disturbance had been noted in the mother.

Dr. MCCARTHY said that the type of mother in these cases had not been investigated by him. The transmission of bacteria or bacterial toxins may be possible. The question of the transmission of altered blood-tension from the maternal to the placental circulation should be considered. Dr. McCarthy had made some investigations along this line, but the results at present were such that satisfactory conclusions could not be drawn.

Leukæmia.—Dr. J. CLAXTON GITTINGS was to have shown the boy exhibited last at the May meeting. He was re-admitted to the University Hospital with a history of uncontrollable bleeding following the extraction of a tooth. Examination showed a slightly enlarged spleen (1 cm. below ribs), but no enlargement of the liver or palpable glands. At the apex of the left lung there were signs of beginning infiltration and the Moro reaction was faintly positive. A week later Vincent's spirillum was found in smears from the edge of the gums, followed by cervical adenitis, with cellulitis and abscess of the upper lip finally. This was accompanied by prostration and dyspnœa. The spleen reached 3 cm. below the ribs. Before death, four weeks after re-admission, there was coffee-ground vomiting with bleeding from the bowel. No autopsy was obtained. Blood examination showed a range in hæmoglobin from 59 to 14 per cent.; erythrocytes 2,000,000 to 1,020,000; leucocytes, 6200 to 55,500; myelocytes from 63 to 68 per cent. The case will be reported later in detail.

A paper on "**Spleno-Medullary Leukæmia in Childhood**" was read by Dr. HOWARD T. KARSNER. Leukæmia was not described in children until sixteen years after the original papers of Virchow and Hughes-Bennett. Even then the distinction between the two forms was not recognised and only in recent years has the difference been well brought out. Only eight cases of the spleno-medullary type were found in literature, which cases were given in full. Dr. Karsner then reported a case on which he had performed the autopsy. Beside the leukæmia there was decided rachitis, with the appearance of large numbers of giant-cells in the bone-marrow. The conclusions drawn were as follows: That spleno-medullary leukæmia in childhood is a rare condition; that it becomes more common or less rare as adult life approaches; that it occurs much more commonly in males than in females; that blood examination shows larger total counts of the leucocytes and that the differential counts show larger percentages of lymphocytes than are found in the adult form of the same disease; further, that the transitional forms of leukæmia are relatively frequent in the early period of life; that the course of the disease is usually rapid and the outcome fatal; and that the leukæmias of childhood as well as those of adult life present very definite pathological features, both grossly and histologically, by which competent examination can determine the diagnosis with accuracy.

Dr. W. T. LONGCOPE said that it was probable that in the cases of so-called mixed leukæmia the large mononuclear cells or large lymphocytes were in reality early, non-granulated myelocytes or pro-myelocytes. It has been definitely established through the work of Opie, Jochmann, Müller and others that the polymorphonuclear leucocytes and neutrophilic granular myelocytes contain a ferment which is capable of digesting proteids. Biologically, therefore, these cells have a property which differentiates them sharply from the small lymphocytes which contain no proteolytic ferment. In studying a case of so-called acute lymphatic leukæmia Dr. Donhauser and Dr. Longcope found that the large lymphocytes contained a proteolytic ferment exactly like that in the granular myelocytes and polymorphonuclear leucocytes, and therefore these cells must be considered biologically as myelocytes.

Congenital Imperforate Rectum.—Dr. J. H. JOPSON reported two cases of operation for imperforate rectum. The first patient was a boy, aged $2\frac{1}{2}$ days, in whom the anus and lower portion of the rectum were well formed, but from whom no bowel movement had been obtained. The abdomen was distended and vomiting occurred repeatedly. Left iliac colostomy was performed and the entire sigmoid and colon were found to be imperforate. The lower part of the small intestine was sutured in the wound, opened at once, and inspissated meconium washed out. There was some faecal discharge following operation, but death occurred eight hours afterward. The condition was evidently incompatible with life. In the second case, a boy aged 24 hours, there was imperforation of both anus and rectum. A perineal incision under chloroform anæsthesia failed to reach the bowel at the depth of two inches. Colostomy was performed at once and the distended sigmoid opened. The child recovered from the operation and was alive two weeks later, but death occurred subsequently from lack of proper food, as the parents were poor and ignorant and the proper artificial food was not obtained. Dr. Jopson has operated on five cases of imperforate anus and rectum, with a mortality of 40 per cent. There was another death, occurring in a case in which the rectum communicated with the bladder and

could not be reached by perineal operation. This child also succumbed after colostomy. Two of these cases are alive and well. In one the rectal pouch was very close to the perineum and operation was simple; in the other it was reached at a depth of an inch and a half from the perineum. Dr. Jopson recommended operation at the earliest possible moment, and if the bowel could not be reached within two inches of the perineum, immediate colostomy is indicated.

Pelvic Abscess due to Ruptured Empyema.—Dr. R. B. WALKER, by invitation, reported this case.

Dr. Jopson said that the case was a very unusual and interesting one. While infection frequently travels upward through the diaphragm—subphrenic abscess for example—it rarely travels downward. Many cases of empyema are seen in which the collection of pus finds spontaneous exit through a bronchus or by pointing on the chest-wall in the neighbourhood of the nipple; but very seldom will it take a downward direction as in this case.

Reports of Societies.

BRITISH MEDICAL ASSOCIATION.

PATHOLOGICAL SECTION OF THE BIRMINGHAM BRANCH.

October the 29th, 1909.

Specimens of Congenital Heart Disease.—Dr. SAWYER showed three specimens of congenital disease of the heart in children dying at the age of 5½ months, 3 months, and 15 months respectively. Each specimen had a defect in the interventricular septum in the pars membranacea. The first specimen had only this congenital defect of the heart, but there was a slight degree of hypertrophic stenosis of the pylorus with dilatation of the stomach and thickening of its walls. The second specimen had also a small opening in the foramen ovale and a patent ductus arteriosus which would just admit a small probe. In the third specimen, in addition to the defect in the interventricular septum, there was stenosis of the pulmonary orifice and also of the pulmonary artery. In the first two cases a systolic murmur was heard all over the præcordia, and the point of maximum intensity of the murmur was just internal to the left nipple. In the third case the murmur was loudest over the third left costal cartilage, and obviously due to pulmonary stenosis on account of the other physical signs present. Dr. Sawyer suggested that when the murmur in congenital heart disease was heard loudest in the third and fourth left spaces just internal to the nipple, it was probably due to a defect in the interventricular septum. He considered that this was a more common form of congenital malformation of the heart than was generally thought. Cyanosis was absent in the first two patients, but was very marked in the third case, in which there was pulmonary stenosis in addition to the defect in the interventricular septum. These

facts were mentioned in support of the view that the cyanosis of congenital heart disease was due to the impossibility of a sufficient amount of venous blood getting to the lungs for its sufficient oxygenation, and not due to the mixing of the venous and arterial blood, which must have been present in all the three patients.

Dr. EMANUEL pointed out that there were two forms of cyanosis which occurred in congenital heart disease. The one was associated with cardiac failure, while the other was characteristic of certain forms of cardiac malformation and was not due to the congestion which occurred in the first class.

The specimens were also discussed by Dr. DOUGLAS STANLEY, Dr. G. H. MELSON, Mr. NUTHALL, and Mr. LEEDHAM GREEN, and opinions were expressed as to the prognosis in the various forms of congenital heart disease.

BIRMINGHAM UNIVERSITY MEDICAL SOCIETY.

November the 10th, 1909.

A Case of Acute Anterior Poliomyelitis.—Dr. STANLEY BARNES showed a boy, aged 4 years, suffering from acute anterior poliomyelitis. Five weeks previously the boy had become unwell, complaining of pains in various parts of the body, but chiefly in the back in the lumbar region. When seen ten days later by Dr. Stanley Barnes, the pain in the back was so severe that the child could only be moved about with great difficulty. The lower part of the back was held rigid, and was curved with the concavity looking backwards. The child could not at that time sit up. The knee-jerks were absent and there was an extensor plantar reflex on each side. On account of the extreme rigidity of the back, the great pain, and the extensor plantar reflex, a diagnosis of spinal caries with involvement of the cord in the lumbar region was first made. It soon became apparent that this diagnosis was wrong, and that the case was one of acute anterior poliomyelitis. The extensor plantar reflex was probably due to the inflammatory process in the anterior horn-cells involving also the neighbouring pyramidal tract to a slight extent. The patient gradually improved while in hospital, and the condition present on November the 10th was as follows. All the pain had disappeared, there was a flaccid paralysis of the legs, more marked on the left side, and there was paralysis of the muscles of the anterior abdominal wall below the umbilicus. The knee-jerks were present and had returned ten days previously. There was an extensor plantar reflex on the left side only and not on the right. The child could sit up in bed and could raise the legs, but was quite unable to walk. The chief interest of the case was the difficulty in the diagnosis in the early stages of the disease, on account of the unusual amount of pain, the slight degree of paralysis, and the extensor plantar reflex.

The case was discussed by Dr. MELSON, Dr. SAWYER, and Mr. BILLINGTON.

Abstracts from Current Literature.

Medicine.

Urinary infection in children (*'Pediatrics,'* 1909, p. 543).—**J. Zahorsky** thinks that urinary infection in children has not received sufficient attention. In the Mississippi Valley it is very common, and ranks next to respiratory and gastro-enteric infections in importance. It is usually overlooked or mistaken for malaria, septicæmia, pneumonia, or influenza. Bacterial invasion may take place through the urethra or rectum. Only rarely can an exact anatomical diagnosis be made from the clinical symptoms. Zahorsky met with three clinical varieties. The first is a febrile form with or without urinary symptoms. It may be mistaken for malaria or typhoid. Though the temperature may be very high, there is an absence of any great systemic depression. The second form is characterised by malnutrition, and is often a sequel of the first. The third is characterised by incontinence of urine. Relapses are frequent. Hexamethylenamine in large doses for a few days is the best drug. Of 42 cases 3 were males, 39 females; 1 died; 6 were under six months old, 9 occurred from the sixth to the twelfth month, 15 in the second year. The oldest patient was aged 9 years. Digestive disturbance accompanied and preceded twelve attacks. The length of the disease, as measured by the pus in the urine, was from five days to eight months.

J. D. ROLLESTON.

Chylous ascites in an infant (*'New York State Journ. of Med.,'* 1909, p. 14).—**Le Grand Kerr**.—Chylous ascites is very rare, especially in children. The ætiology is obscure. The diagnosis can only be made by the character of the fluid withdrawn. The present case is the youngest on record. A boy, aged 16 days, showing signs of congenital syphilis, was admitted to hospital with a greatly enlarged abdomen and swollen scrotum. Fifteen ounces of milky fluid with all the characteristics of chyle were withdrawn from the scrotum on admission, and another eight ounces five days later. A third puncture, at which twelve ounces were removed, was made at the end of another week. A double inguinal hernia subsequently developed, but became reducible in a few days. When seen two months later the child was improving.

J. D. ROLLESTON.

Incomplete heterotaxy (*'Arch of Pediat.,'* 1908, p. 881).—**B. F. Royer and J. D. Wilson**.—A boy, aged $6\frac{1}{2}$ years, died suddenly in convalescence from varicella twenty-four days after the onset of scarlet fever. Complete transposition of all the abdominal organs was found. The greater portion of the liver was on the left. Five spleens were found on the right side in relation to the lower four ribs, diaphragm, right supra-renal and right kidney. The stomach lay almost entirely on the right side. The cæcum and appendix were in the left iliac fossa. The heart was not transposed, but the left ventricle was abnormally small. The aorta and stenosed pulmonary artery both arose from the right ventricle. The other cardiac lesions were patent foramen ovale, incomplete ventricular septum, and mitral stenosis. The left lung was the largest and consisted of three lobes. The œsophagus entered the stomach to the right of the middle line. The relations of the vagi to the œsophagus were completely changed. The right recurrent laryngeal wound round the arch of the aorta. The vena azygos major was found

on the left side. The thoracic duct ran between it and the aorta, and entered the junction of the right internal jugular and subclavian veins.

J. D. ROLLESTON.

Infantilism of Lorain type (*Arch. of Pediat.*, 1908, p. 932).—A. Hymanson records a case in a boy, aged 15 years, whose family history was negative. Development was normal till the age of 6 years, when he had a very mild attack of measles. At fifteen his height was $3\frac{1}{2}$ ft. and his weight 41 lb. as compared with the normal $5\frac{1}{4}$ ft. and $110\frac{1}{2}$ lb. The chest was covered with adipose tissue. Axillary and pubic hair was absent and the genitals infantile. Intelligence was good. No improvement followed thyroid treatment. X rays showed no backwardness of ossification in the carpal bones. Infantilism has been classified by Meige into (a) myxoedematous type due to a defective or abnormal function of the thyroid gland; development and ossification are arrested, and there is a long persistence of a juvenile state of body and mind; (b) Lorain type due to defective arterial development. This may be associated with congenital syphilis, tuberculosis, alcoholism and various infectious diseases. The stunted growth is due to premature, not to defective ossification. Thyroid treatment is of no value in the Lorain type, but is indicated in the myxoedematous.

J. D. ROLLESTON.

Measles in nurslings (*Wien. Med. Presse*, 1909, p. 44).—B. Sperk had observed 592 such cases. Children appear to be immune during the first year of life, but become more susceptible as age advances. Breast-fed and hand-fed children do not differ as regards susceptibility to infection and complications. The eruption is often slight in the weakly and cachectic, and may be localised, especially to the region behind the ears. Koplik's spots are a most valuable and constant symptom, and may be present in cases of measles without eruption. The younger the child the less liable are the mucous membranes to be affected. The eruption is often better developed round areas of intertrigo than on the face. The prognosis is worse than in older patients on account of the frequency of respiratory complications, and is particularly grave in tuberculous nurslings.

J. D. ROLLESTON.

Unexpected death in scarlet fever (*Presse Méd.*, 1909, p. 137).—Gouget and Dechaux.—The possibility of its occurrence should prevent one giving an unreservedly favourable prognosis in even the mildest case. It may take place at any stage of the disease. (1) In fulminating cases of malignant scarlatina before the appearance of the eruption and even before the angina. Diagnosis is then only possible from the knowledge of one or more cases of scarlet fever in the patient's surroundings. (2) On the fourth or fifth day of an ordinary attack, as in a case recorded by the writers in a girl aged 7 years. (3) In convalescence. In all these cases the autopsy is absolutely negative. Hypotheses as to the determining cause of death are unsatisfactory. The personal and family antecedents of the patient should be investigated, and inquiry made as to any alcoholic, syphilitic or tuberculous heredity, and occurrence of other sudden deaths in the family (*cf.* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1907, pp. 312, 360, and 504).

J. D. ROLLESTON.

Diphtheritic conjunctivitis following measles (*Arch. de Méd. des Enf.*, 1909, p. 81).—Weill and Mouriquand record five cases, four of

which have already appeared in Langier's thesis, which Weill had inspired (*v. BRITISH JOURNAL OF CHILDREN'S DISEASES*, 1908, p. 412). Two varieties are described: (1) A late form, occurring from ten to thirty days after the eruption. Corneal ulceration is frequent, and perforation sometimes results, but fatal cases are rare. Complete recovery occurs in about 30 per cent. Antitoxin has little effect upon the progress of the lesions. (2) An early form which appears at the height of the eruption or during its decline. Corneal ulceration and death invariably result. Antitoxin and other treatment are absolutely unavailing.

J. D. ROLLESTON.

Adenitis in scarlet fever (*'Thèses de Paris,' 1908-9, No. 224*).—**L. Guyonnet** distinguishes three kinds of adenitis in scarlet fever. (1) Primary adenitis. (2) Secondary adenitis which appears at the same time or a little later than the eruption; it is not peculiar to scarlet fever and is probably due to a naso-pharyngeal infection. (3) Post-scarlatinal adenitis (Schick), which is much the most important and is peculiar to scarlet fever. It is most frequent in the third or fourth week, but may arise in the second or as late as the eighth. Resolution is the rule, suppuration the exception. Its diagnostic importance is considerable in that it may indicate a previous abortive attack of scarlet fever. It may occur as an isolated phenomenon, but it is often associated with other symptoms, the most frequent and important of which is nephritis, less commonly endocarditis, rheumatoid pains, and in rare cases a relapse may accompany it. Whether it is due to the primary disease or to secondary infection must remain undecided as long as the bacteriology of scarlet fever is uncertain. The thesis contains the histories of sixteen cases, nearly all of which are original.

J. D. ROLLESTON.

Treatment of cerebro-spinal meningitis (*'Arch. of Ped.,' 1908, p. 756*).—**C. H. Dunn** used Flexner's serum in forty cases. Injections were made into the cerebro-spinal canal. The routine dose was 30 c.c. repeated daily till the symptoms were relieved. The minimum dose was 10 c.c., the maximum 45 c.c.; 31 recovered, a mortality of 22.5 per cent. Only two had sequelæ, one being deaf, and one blind and deaf. Dunn thinks that the serum is of great value, that it aborts the disease, frequently relieves the symptoms, lessens the liability to sequelæ, and greatly reduces the mortality. Early injection is important.

J. D. ROLLESTON.

Meningococcus hydrocephalus (*'Arch. of Ped.,' 1908, p. 761*).—**J. H. M. Knox** and **F. J. Sladen** review the literature and record two cases of this condition; the first was a boy, aged 5 months, in whom death took place four months after the onset; the other was a boy, aged 6 months, in whom enlargement of the head and intra-cranial pressure at first suggested a tumour. One hundred and twenty cubic centimetres of straw-coloured fluid were obtained by puncture of the ventricle, and chronic internal hydrocephalus of congenital origin was diagnosed. Examination of the fluid, however, showed numerous meningococci. Some improvement followed the use of Flexner's serum, but death occurred suddenly, probably from a sudden increase in the intra-ventricular pressure.

J. D. ROLLESTON.

Length of interval between feedings (*'Arch. of Ped.,' 1908, p. 781*).—**C. G. Grulee** thinks that a four-hourly interval between feedings for infants has the following advantages: (1) It allows the stomach a rest

between the feeds and thus checks certain cases of vomiting; (2) it renders possible the antiseptic action of the free hydrochloric acid; (3) it allows the child longer periods of rest between the feeds; (4) it prevents over-feeding; (5) it saves the mother or nurse.

J. D. ROLLESTON.

Otitis media in varicella ('*Rev. Hebdomadaire de Laryngologie*,' 1909, p. 65).—**M. Jacod** thinks that the aural complications of varicella are much more frequent than is supposed. He distinguishes the early otitis which is due to the spread of bucco-pharyngeal inflammation by the Eustachian tube from late otitis which is an aural localisation of a general infection, and is always associated with secondary infection of the skin. He records five cases of the early variety, three of which occurred in children with large tonsils and adenoids, and four cases of late otitis, all of which occurred in weakly children. Late otitis is more serious than the early variety and is of longer duration. As a rule the aural lesions of varicella are milder than those of scarlet fever or diphtheria. The mastoid cells are rarely affected. Like **Moy** (*v. BRITISH JOURNAL OF CHILDREN'S DISEASES*, 1907, p. 455), Jacod insists on the importance of prophylactic treatment.

J. D. ROLLESTON.

Tuberculin tests in young children ('*Arch. of Pediat.*,' 1909, p. 1).—**L. Emmett Holt** reports upon one thousand tuberculin tests in children, the majority of whom were under two years. The ophthalmic test was made 615 times. For the first half of the tests a 1 per cent. solution was used, for the latter half $\frac{1}{2}$ per cent. Of thirty-eight cases in which tuberculosis was certain either from the autopsy or from the presence of tubercle bacilli in the sputum, twenty-five gave a positive reaction. Ten who were dying or suffering from extreme prostration gave a negative and three a doubtful reaction. Of twenty-one in whom tuberculosis was probable, nineteen gave a positive, two a doubtful reaction. Of 555 who had probably not tuberculosis, 546 gave a negative, two a positive, and seven a doubtful reaction. In 12 per cent. the reaction lasted longer than three days, but in none did serious results ensue. Von Pirquet's skin test was employed 217 times. Of twenty-two cases in whom tuberculosis was certain twelve gave a positive, ten a negative reaction. Nine of the latter were moribund or prostrate. Of 172 in whom tuberculosis was probably not present 166 gave a negative and six a positive reaction. In thirty-eight cases a subcutaneous injection of $\frac{1}{100}$ mgr. of tuberculin was given (puncture reaction). All these patients were submitted previously or subsequently to Von Pirquet's reaction, and the results were the same with each test. Intra-muscular injection of tuberculin in doses of $\frac{1}{2}$ mgr. for infants under six months and 1 mgr. for older children was used 130 times (fever reaction). Of twenty-eight cases in which tuberculosis was certain, twenty-two gave a positive, two a negative, and four a doubtful reaction. Of twenty-one in whom tuberculosis was probable, eighteen gave a positive and three a negative reaction. Of eighty in whom tuberculosis was improbable, seventy-eight gave a negative, one a positive, and one a doubtful reaction. Holt thinks that the skin test is the best since it entails no local discomfort, no general reaction and no complications. The possible dangers of the eye-test render its use inadvisable among out-patients. The fever reaction may produce severe constitutional symptoms, and may possibly light up a latent process. None of these tests are as absolutely conclusive as the presence of the tubercle bacillus in the sputum or cerebro-spinal fluid, and though they furnish strong

probability of the existence of a tuberculous lesion, they do not enable one to distinguish between a latent and an active condition.

J. D. ROLLESTON.

A case of chloroma (*St. Thomas's Hospital Reports*, 1907).—**Herbert C. Squires** reports a case of chloroma in a girl, aged 6 years. There was pain in the right ear three weeks before admission to St. Thomas's Hospital. Ten days later the eyes "began to swell," and shortly after this the right side of the face became paralysed. On admission masses were felt over both zygomata, and various groups of glands were slightly enlarged. The differential white counts showed—twelfth day of illness: white cells, 32,886; colour index, 1·2; F.G.Os., 5·2 per cent.; small lymphocytes, 47·7 per cent.; large lymphocytes, 38·8 per cent. Twenty-ninth day of illness: white cells, 62,700; colour index, 0·8; F.G.Os., 7·4 per cent.; small lymphocytes, 10·6 per cent.; large lymphocytes, 69·8 per cent. Exophthalmos became more marked. There was very great cedema of the ocular conjunctiva, the eyelids themselves became swollen, and the corneæ practically sloughed off. Death occurred on the fifty-ninth day of the illness. Patient was a Jewess, and no post-mortem examination could be obtained.

JAMES E. H. SAWYER (Birmingham).

A case of plastic bronchitis (*St. Thomas's Hospital Reports*, 1907).—**Herbert C. Squires** reports the case of plastic bronchitis in a child, aged 4 years. The patient was admitted to St. Thomas's Hospital with a five days' history of dyspnoea. There appeared to be marked laryngeal obstruction, and two doses of diphtheria antitoxin, 14,000 units in all, were given. On the second day after admission an extensive bronchial and bronchiolitic cast was coughed up, but though symptoms were somewhat relieved for the time the child's condition was extremely precarious for several days. A second cast, even more extensive, was coughed up three days after the first. The child then improved, but appeared neither cheerful nor well even on discharge. The throat was examined for diphtheria bacilli on two occasions with negative results. Sections of the casts showed organisms which were mainly cocci though a few bacilli were present. Ten days after discharge, *i. e.* six weeks from onset of illness, the child was readmitted with strabismus, paralysis of accommodation, and absent knee-jerks.

JAMES E. H. SAWYER (Birmingham).

A case of lymphæmia (*St. Thomas's Hospital Reports*, 1907).—**Herbert C. Squires** reports a case of lymphæmia in a child, aged 2 years and 10 months. For one month the child had appeared drowsy and had been sweating profusely. Violent epistaxis occurred seven days before admission, and after this the child appeared to become very ill. There was vomiting for four days only. On admission to St. Thomas's Hospital the child was very pale, with well-marked petechial eruption and blood-stained discharge from the nose. The liver and spleen were readily palpable. Blood-count: red cells, 1,190,625; hæmoglobin, under 10 per cent.; colour index, 0·4; white cells, 2620; of these F.G.Os. 2 per cent., small lymphocytes 80·75 per cent., and large lymphocytes 16·75 per cent. No nucleated red cells were seen. Death occurred three days after admission. At the post-mortem examination there was an excess of hæmolymp glands; numerous hæmorrhages. There was a mononuclear infiltration of the organs.

JAMES E. H. SAWYER (Birmingham).

Acute yellow atrophy in a boy, aged 11 years (*'St. Thomas's Hospital Reports,'* 1907).—**Herbert C. Squires.**—The boy was treated in the out-patient department of St. Thomas's Hospital for what was considered to be catarrhal jaundice from August 26. Vomiting commenced on September 9, and diarrhoea on September 14. He was admitted as an in-patient on September 17, when the liver was found to be enlarged. The gall-bladder was explored next day, and was found to be normal. Death September 19. At the post-mortem examination there were found various hæmorrhages. The liver surface was wrinkled, and necrosis of the hepatic substance was well marked. Fatty changes were slight. The kidney showed degenerative and fatty changes in the tubular epithelium. The pancreas contained areas of necrosis.

JAMES E. H. SAWYER (Birmingham).

Toxæmic jaundice in a girl, aged 1 year and 10 months (*'St. Thomas's Hospital Reports,'* 1907).—**Herbert C. Squires.**—Measles commenced on August 14, and jaundice was first noticed on September 3. Vomiting commenced on September 10, and diarrhoea a week later. She was admitted to St. Thomas's Hospital on September 23 in a comatose condition, and died in convulsions an hour later. At the post-mortem examination the liver was found to be yellow, firm, and cirrhotic. There were areas of necrosis and diffuse fatty change. Kidneys: fatty change and necrosis of the tubular epithelium. Liver culture: *B. coli* and *B. proteus*.

JAMES E. H. SAWYER (Birmingham).

Non-rheumatic aortic stenosis in young subjects (*'Lyon Médical,'* January, 1909, No. 5, p. 189).—**L. Gallavardin** has an original paper on this subject, in which he says that there exists in young subjects an aortic stenosis with marked physical signs, which does not exactly correspond with what is known of congenital stenosis and which is neither of arterial origin nor rheumatic in its nature. This kind of stenosis usually exists singly, and when it is accompanied by slight insufficiency it is always markedly predominant. Clinically it is characterised by a very prolonged tolerance; it may, however, be accompanied at a more advanced stage by functional symptoms and disturbances of compensation. In some cases development has been abnormal. The true nature of this affection is problematical. It may be that in some cases it is the result of a congenital lesion tardily developed; but in the majority of instances it appears more plausible to admit the existence of a lesion acquired and slowly developed in infancy or adolescence, of the nature of a subacute or chronic endocarditis, and due to a cause hitherto undefined. From this point of view it may be compared with the mitral stenosis in young subjects described by Duroziez.

VINCENT DICKINSON.

Acute alcoholism in an infant aged 22 months (*'La Clin. Infant.,'* April, 1909, No. 7, p. 201).—**Zuber** and **Cany** reported this case to the Soc. de Pédiat. The child, who was suffering from a slight attack of indigestion, was given in mistake for water 120 c.c. of Kirsch in three doses in the space of two hours and a quarter. When the mistake was perceived syrup of ipecac. was given to promote emesis in teaspoonful doses, but at the third dose, about five minutes after taking the Kirsch, the child could no longer swallow and became insensible. All the muscles were relaxed; there was complete anæsthesia with suppression of corneal and pupillary reflex; respiration 45, regular, pulse 180 or more. A hot bath with cold affusion was administered, and after vomiting consciousness began to return.

four or five hours later. Vomiting continued for some time and some convulsive movements of the arms were noticed. The next day the child was quiet but weak, and a certain amount of nervous irritability persisted for several days. Analysis of the Kirsch showed that the infant had imbibed 54 c.c. of absolute alcohol and $5\frac{1}{2}$ mgrm. of hydrocyanic acid. A study of the toxic action of hydrocyanic acid makes it improbable that the symptoms in this case were due to this substance, as the patient had no oppression of breathing and no slowing of the pulse and respiration; they agree rather with the researches of Lesieur (*Journ. de Physiol. et de Path. gen.*, 1906, viii, p. 427) that the characteristic symptom of intoxication by pure alcohol is paralysis, which is constant and attacks both motion and sensation; he also mentions loss of corneal reflex and bloody stools. The mechanism of these symptoms is explained by cellular dehydration. The fatal dose of absolute alcohol is 10 gm. per kilogramme for animals, or three times the dose taken by this patient. The alcohol was principally responsible for the symptoms. The hydrocyanic acid perhaps at the onset added its own and specific action, but either from insufficiency of the dose or a greater tolerance on the part of the child, as is the case with other poisons, it does not seem to have produced any well-marked symptoms. The case must therefore be considered as one of acute accidental alcoholism, the symptoms of which conformed in every way to the most recent experimental researches.

VINCENT DICKINSON.

The food ration in infants (*La Clin. Infant.*, April, 1908, No. 8, p. 232).—Fayolle follows the teaching of M. Variot in this paper. The child should be put to the breast in the first few weeks every two hours except between 11 p.m. and 5 a.m.—that is, nine times daily; then as he begins to take more, *i.e.* between six weeks and two months, every two and a half hours, and after five months every three hours. If the breasts are well developed each should be given alternately, but if lactation is scanty both should be given at each feed. The infant should be left at the breast at least ten minutes. The results of researches show that the majority of authors consider that the gastric capacity increases proportionately to the body-weight, but Zuccarelli (*Thèse de Paris*, 1897) has noticed an almost constant relation between the gastric capacity and the length of the body. This is the opinion also of M. Variot, who says that there is a corresponding increase in the gastric capacity and body-length, both of which grow with remarkable rapidity in the first weeks of life, a rapidity which is never seen subsequently. Admitting (at least after the second month) that the quantity of milk taken per cm. of body-length is almost invariably 15 gm., it follows that by multiplying the height of the infant by this co-efficient the exact quantity of milk that should be taken will have been accurately arrived at.

VINCENT DICKINSON.

Chronic splenomegalic polycythæmia (*The Post-graduate*, March, 1909).—Chace publishes the case of a girl, aged 17 years, with a good family and personal history. Three years previously she had a severe cough, and since this, palpitation, weakness, blueness of lips and fingers. Three months before admission to hospital an epileptiform fit occurred with epistaxis. Four similar attacks followed. On admission she was well nourished, with dusky skin; lips, gums, tongue and conjunctivæ blue; fingers clubbed. No glandular enlargement. Heart forcible and accelerated. Spleen palpable $1\frac{1}{2}$ inches below costal margin. Red blood-cells 7,500,000, white blood-cells 6250, hæmoglobin 112 per cent., polynuclears 74 per cent., lymphocytes 25

per cent., eosinophiles 1 per cent. Systolic blood-pressure 120 mm.; slight albuminuria. Pulse averaged 100. The patient suffered from headaches and indefinite abdominal pains. The convulsions occurred. She did not improve and grew weaker. She was given iodide of potassium and a non-proteid diet. She left the hospital not improved. This is the earliest recorded case of this disease, which generally occurs between the ages of forty and fifty.

J. PORTER PARKINSON.

Cerebro-spinal meningitis and its treatment by Flexner's serum ('*L'Echo Med. du Nord*, March, 1909).—**Grysez**.—There has always been difficulty in growing the organism of this disease outside the body. Flexner has shown that this is not due to the weakening of the medium nor to the accumulation of its products of excretion. He adds to the nutritive medium a quarter of its volume of a microbial extract, produced by the action of toluol or saline solution to retard the development of the organism. Flexner finds that the germ is very susceptible to changes of temperature, and dies easily when this ranges much below that of the human body, or when the microbes are in very large numbers. He considers its fragility is due to the presence of an autolytic ferment contained within itself. Flexner has studied the disease by inoculation of the ape by lumbar puncture, thus producing a disease similar to that in the human subject. Flexner prepared his serum by injections of live cultures under the skin of horses, and later into the veins; this was followed by injections of autolysins. The serum was then used on the human subject and with immediate success: the mortality was reduced from 75 to 90 per cent. to 20 to 43 per cent. in various epidemics. Age has a great effect on the result of the treatment, as shown by this table:

	Cases.	Percentage mortality.
Under 1 year	22	50
1-2 years	19	42
2-5 "	68	23
5-10 "	79	11·4
10-20 "	105	23·8
Over 20	87	26·4
Age unknown	12	46

The mortality is much less the earlier the treatment:

Day of first injection.	Percentage mortality.
1-3	14·9
4-7	22
After 7 days	39

The effect is rapid, the temperature falls the first day, headache is relieved, stupor lessens, consciousness reappears. Stiffness of the neck and Kernig's sign persist for some time. The serum is injected by lumbar puncture, after as much as possible of the cerebro-spinal fluid has been withdrawn. Twenty to thirty c.c. is used in ordinary cases and 40-45 c.c. in grave cases. The dose is repeated daily.

J. PORTER PARKINSON.

Tetany ('*Med. Press*, April 7, 1909).—At the Gesellschaft der Aertze of Vienna **Spierer** showed a girl, aged 10 years, who had suffered for eight years with recurring tetany. She had been breast-fed and had learnt to walk by the ninth or tenth month. The forehead was prominent, but there were no special signs of rickets. The lens was cloudy and the teeth were

hypoplastic. Gently striking the facial muscles easily produced a contraction of the orbicularis oris muscle, and if the arm were tied or pressure applied to the brachial plexus the contractions were immediately produced. If electric stimuli or galvanic irritation were applied to the left side of the head near the eye, cloudy rays could be seen running from the periphery of the lens towards the centre, while in the right lens a number of fine punctiform specks, varying in size, were observed to radiate from the margin. The hypoplasia of the teeth, due to trophic disturbance, was especially marked in the upper and lower incisors and pre-molars. The hair also suffered from trophic changes, being split at the ends into points (trichorrhexis). All these morbid changes seem to have some connection in tetany with the function of the epithelial bodies in the thyroid. The nails, however, were remarkably healthy and perfectly normal. Taking into consideration all the peculiarities of the case, Spieler described it as being of a parathyreopriva pathogenesis which had produced the tetany noxa.

T. R. WHIPHAM.

Pneumo-thorax in a child, aged 2 years (*'Arch of Pediat.,'* February, 1908).—Huber reports a case in which pneumo-thorax occurred suddenly in a boy, aged 2 years. Except for measles and pneumonia during his first year, the child had been healthy until a fortnight before admission to hospital. He was then suddenly attacked with vomiting accompanied by a high temperature, but apparently recovered and was well for nearly a week. He then suffered from severe cough and vomiting with much dyspnoea and a slight rise of temperature, but had no cyanosis. When seen there were evident signs of pneumo-thorax on the left side. The child made a good recovery without surgical treatment. Several examinations of the sputum failed to reveal the presence of tubercle bacilli, but the pleuritic fluid was not bacteriologically examined.

T. R. WHIPHAM.

On the therapeutics of whooping-cough (*'Allg. Wiener medicin. Zeitung,'* February 2, 1909).—Czerny regards whooping-cough, like pneumonia, as a clinical entity only; he believes that many differing micro-organisms are the causes of the disease, and thinks this explains the varying nature of the epidemics one meets with in practice. The intensity of the cough is independent of the intensity of the disease; it is greater in children of neuropathic families, and it is the nervous system that requires treatment rather than that of the air-passages. It is insufficiently known that whooping-cough can be successfully treated by psychical methods. From this point of view it is a great mistake to isolate a number of children suffering from this disease in various forms in one ward as is done in hospital. This method is disastrous to all the children. The child must be isolated from others, and care is required on the part of the attendants not to appear too anxious. Change of air is often beneficial just as it is in other nervous conditions. Many of the drugs, like quinine, and treatment like hydrotherapy and inhalations, act by suggestion; this is the explanation of their diverse results. Suggestion must be adapted to the understanding of the child and is most successful with the older children; narcotics should only be used in urgent cases.

M. D. EDER.

Cholangitis in a suckling (*'Wien. klin. Rundschau,'* April 4, 1909).—Goldreich showed to the Pediatric Section a baby, aged 4 months, who had jaundice since the fourth day after birth. The jaundice of the skin and

sclerotics was marked. The liver and spleen were swollen. No suggestion of syphilis. Since the infant had been under observation the intensity of the jaundice had somewhat diminished, as had the volume of the spleen and liver, and the biliary pigments had disappeared from the urine. He regarded it as a case exactly analogous to that of catarrhal jaundice of later life, and believed that in this infant it had originated in the intestinal canal. The disease was extremely rare in sucklings.

M. D. EDER.

Achondroplasia, with report of a case by George C. Waiss (*'Amer. Journ. of Obstetrics,' June, 1908*).—**Waiss** considers "this rare form of dwarfism, of ancient origin, has not been given the prominence the condition warrants." This the writer attributes to the fact that the majority of cases are stillborn or survive but a short time. The usual characteristics were presented by the fœtus, which was delivered by forceps traction after a protracted labour. There is no further addition to our knowledge given in this report.

J. HOWELL EVANS.

Pathology.

Cases of general tuberculosis (*'St. Thomas's Hospital Reports,' 1907*).—**Herbert C. Squires** summarises 28 cases of general tuberculosis as follows. Two of these were over twenty years of age. Tubercles were present as follows in the various organs: lungs in 28 cases, spleen in 26, liver in 21, meninges in 19, kidneys in 18, on the pleuræ in 4, peritoneum in 3, pericardium in 3. Additional foci of tuberculous disease: caseous tuberculous glands were recorded in every case except three; in two of these none could be found and in the third no statement was made; old-standing lung disease 3, brain 4, tonsil 2, heart 2. Extension from bronchial glands to the lung occurred in five cases. Four of these were on the left side and three were in the left lower lobe. Endocarditis was present in two cases—one of these was probably a definite tuberculous endocarditis (see *'Proceedings of the Royal Society of Medicine,' 1908*). The original focus of the disease appeared to be: thoracic glands 21, glands (probably thoracic) 1, lungs 2, abdomen 1, mesenteric or thoracic glands 1, intestinal ulceration 1, meninges 1. In the last two cases there was no naked-eye evidence of tuberculous disease of the glands. The cerebro-spinal fluid was examined cytologically after lumbar puncture in twelve cases of meningitis. The cells were mainly small lymphocytes in five cases, and in the remainder—

F.G.Os. per cent.	Small lymphocytes per cent.	Large lymphocytes per cent.	
18	.	58	.
		—	No visible meningitis post-mortem.
44	.	40	.
46	.	38	.
59	.	26	.
62	.	15	.
79	.	6	.
Large numbers	—	.	—
		—	Fluid clear.
		2	" "
		13	" "
		5	Fluid slightly turbid.
		15	Fluid sterile.
		2	—
		—	—

JAMES E. H. SAWYER (Birmingham).

The supra-renal capsules and rickets (*'La Pediat.,' March, 1909, No. 3, p. 195*).—**A. Jovane** and **C. Pace** performed a number of experiments, showing that the injection into rachitic children of 1 in 1000 solution of

adrenalin in doses of $\frac{1}{16}$ to 1 c.c. produced increase of muscular tone and appetite and improvement in nutrition. Histological examination of the supra-renals of rabbits affected with rachitiform osseous lesions failed to show any changes analogous to those observed in the supra-renals of rachitic infants. Bilateral capsulectomy in puppies proved fatal in twenty-four hours. Unilateral capsulectomy did not produce any histological change in the bones except a vaso-dilatation of the capillaries of the medullary spaces. The experiments tend to show that there is no relation between the supra-renals and rickets from an anatomical point of view, but whether there is any chemical or biological relation remains to be proved.

VINCENT DICKINSON.

The pathology of "growing pains" (*Gaz. Méd. de Paris*, April, 1909, No. 34, p. 5).—**P. Coudray** finds in these cases a diminution of the mineral elements of the urine and an excess of uric acid in relation to urea. These pains have nothing to do with growth, and are observed in children or young adults who present a defective balance of nutrition and are the offspring of arthritic parents. They are, therefore, under the direct influence of arthritism, and are probably due to congestive conditions taking place in the bulbar zone of the bones, *i. e.* in that part of the diaphysis bordering on the interarticular cartilage.

VINCENT DICKINSON.

Twenty-eight cases of idiocy with necropsy (*L'Echo Méd.*, May, 1909).—**Raviart** and **Cannae** report from the Asile d'aliénés d'Armentières: Meningitic idiocy, fourteen cases. In these there was thickening and adherence of the meninges; in addition in some portions of the brain were absent or atrophic, such as the frontal lobes, corpus callosum, etc. Meningocephalic idiocy, eleven cases: In all of these the meninges were thickened and adherent; in some cases there was also cerebral softening. Wassermann reaction was positive in five of these cases and negative in one case, in the others it is not mentioned. Simple arrest of development, three cases: One had microcephaly and one great simplicity of the convolutions. Idiocy symptomatic of atrophic sclerosis, three cases. Microcephalic idiocy, three cases: In two Wassermann reaction was negative, in one positive. Porencephalic idiocy, two cases: Wassermann reaction positive in both. They were both hemiplegics. Hydrocephalic idiocy, three cases, in two of which Wassermann reaction was positive. There was one case of absence of corpus callosum and congenital malformations; one of so-called hypertrophy of the brain, the brain weighing 1810 gm. [the weight of the normal adult brain is 1323 gm.]; and one of myxœdematous idiocy. Wassermann's reaction succeeded in 47 per cent. of the cases, showing that syphilis plays a high rôle in the ætiology of idiocy.

J. PORTER PARKINSON.

Therapeutics.

The treatment of convulsions of gastro-intestinal origin in bottle-fed infants (*La Clin. Infant.*, April, 1909, No. 8, p. 256).—These convulsions are afebrile and take the form of repeated short convulsive seizures lasting several days. (1) The infant should be at once placed on water diet for twenty-four to forty-eight hours, giving a soup-spoonful every half hour of pure water, such as Vittel or Alet. (2) Morning and evening a purgative enema is given consisting of senna leaves 10 gm., water 150 gm., infused for half an hour and filtered. (3) Half an hour after the action a sedative

enema; bromide of potash 0.60 grm., hydrate of chloral 0.60 grm., water 100 grm. (4) Every three hours a lime bath at 36° for twenty minutes. (5) Injections of 50 grm. of Quinton's plasma. (6) After two days, if the attacks are less or have disappeared, asses' milk in teaspoonfuls may be tried.

VINCENT DICKINSON.

Treatment of impetiginous eczema by dressings of nitrate of silver (*La Clin. Infant.*, May, 1909, No. 10, p. 317).—**Deguy**, author of a work on 'La thérapeutique vénérienne,' demonstrates the excellent results of this method. He cites the case of a child, aged 6 years, who since the age of 2 years had been treated for obstinate attacks of eczema. A fresh attack of slight eczema broke out on the face and scalp, of which not much notice was taken at first, but owing to scratching four or five pustules of impetigo occurred on the forehead. The usual treatment was prescribed, but forty-eight hours later a severe confluent impetiginous eczema spread over the scalp, forehead, ears and part of the face; then ulcerating pustules developed on the thigh, leg and forearm, and conjunctivitis with much œdema of eyelids supervened. Wet dressings of nitrate of silver, 1 in 250, were applied. In forty-eight hours the crusts and pustules had disappeared. The same dressing was subsequently applied to each fresh pustule and in ten days a complete cure was obtained, leaving a black discoloration which soon disappeared.

VINCENT DICKINSON.

The principles of treatment of scoliosis (*Journ. de Med. de Bordeaux*, May, 1909).—**Fraikin** and **de Cardinal** consider that scoliosis may be completely cured if taken at the commencement, but when secondary curvatures appear complete cure is less frequent. When there are grave deformities of the thorax one can only hope to arrest its further evolution. When suspension reduces the deformity the prognosis is good. Massage and vibratory electric massage are highly recommended to diminish muscular tonus and improve nutrition and lessen adhesions; it should be practised on the muscles of the flanks, neck, abdomen, and lateral thoracic regions for five minutes before the gymnastic exercises, which should be rhythmic and progressive, each variety of scoliosis having those exercises most appropriate to itself. This should be followed by a cold douche and percussion over the spine if there are no cardiac or pulmonary troubles. Corsets are useless in the slighter cases, but are useful as a support in the severer ones merely to maintain a good position. They have no curative effect and to some extent cause muscular atrophy and embarrassment of the breathing; they should then not be tight or heavy. The gymnastics should be practised from half to one hour daily according to the age and strength of the patient. As a rule several months of treatment are necessary.

J. PORTER PARKINSON.

Pilocarpine in the laryngeal obstruction of measles (*Giorn. Intern. d. Sci. Med. Naples*, 1908, xxx, 310).—**A. Montefusco**.—A new method of treating the severe laryngeal obstruction occurring in measles: Pilocarpine nitrate in 1 mg. doses, subcutaneously injected and repeated if necessary almost always gives relief. In four years Montefusco has treated forty-five cases with only two deaths, which in his opinion were due to pneumonia. Over 26 per cent. is the usual mortality under the ordinary methods of treatment, *i. e.* tracheotomy or intubation; these latter have never been necessary in the cases recorded.

GEORGE N. BIGGS.

Otology, Laryngology, and Rhinology.

Tracheotomy in slight respiratory obstruction associated with febrile toxæmia ('*Lancet*,' January 26, 1907).—**Bisson** points out that these cases are commonest in septic scarlatina, and now and then in variola. The indications for tracheotomy in this type of case are: (1) *Difficult breathing*, due to pressure from œdema and acute inflammation of the cervical subcutaneous tissue, with marked lymphadenitis. The obstruction is usually extremely light, but it is its duration which tells, especially on the heart strain. (2) *Restlessness*. (3) *Recession*. (4) *Heart strain*. (5) *Pulsus paradoxus*. (6) *Facial lividity*. (7) *Septic laryngitis*. After tracheotomy the improvement is remarkable. It is better to operate under a local anæsthesia. A high and rapid tracheotomy with a small incision is recommended. Prognosis is less favourable in children under three.

MACLEOD YEARSLEY.

Foreign bodies in the nose giving rise to empyema of the maxillary antrum ('*Zeitsch. f. Ohrenheilk.*,' vol. LIV, pt. 2).—**Krebs** points out that the fact that foreign bodies in the nose may give rise to accessory sinus disease is not generally recognised. Among the cases he describes is one of a girl, aged 11 years, in whom a baby's india-rubber teat was found, encrusted, and bathed in foul, viscid pus, in the right nasal fossa. The right maxillary antrum was found to be full of pus, but the parents refused to allow any operation and the child was still suffering when Krebs saw her six years later.

MACLEOD YEARSLEY.

The treatment of hypertrophy of the faucial and pharyngeal tonsils ('*Medical Bulletin*,' December, 1907).—**Gleason**, of Philadelphia, deprecates removal of adenoids when there is good nasal respiration, or when there is only occasional obstruction to nasal respiration from swelling of the third tonsil due to the result of a coryza. In such cases he advises breathing exercises. When the growths are not large they should be painted with iodine by the surgeon two or three times a week, and the parents should cleanse the nose night and morning with an atomiser containing an alkaline wash, and then place in the nostrils a piece of gallic acid ointment (1 to 2 per cent.) while the child lies on its back. When the hypertrophy is great he operates, but avoids chloroform. [Perusal of the above gives the impression that the suggested "treatment" is far more troublesome and decidedly more unpleasant to the patient than simple removal.]

MACLEOD YEARSLEY.

Modern methods of treating infective conditions of the throat ('*Lancet*,' March 28, 1908).—**Meredith Young** has a most important and original paper which emphasises the great importance of treating the throat in infective conditions. Considering that scarlet fever is analogous to diphtheria in its pathology, there being a local bacterial factory in the throat from which toxin is distributed throughout the system to produce the secondary manifestations of the disease—lymphadenitis, nephritis, otitis, etc.—he has made careful tests as to the influence of antiseptic treatment of the throat upon the number of bacteria therein. The experiments consisted in the examination of swabs taken from the fauces before and after various forms of treatment. The latter comprised gargling, douching,

swabbing, and antiseptic lozenges. Briefly, his results were excellent. Of gargles, boric acid is to be absolutely condemned. Swabbing and douching appear to be far more efficient than gargling and of antiseptic lozenges; the value of "Formamint" is strongly emphasised. Young considers that the use of these tablets has prevented the development of septic conditions and their consequences, and quotes the following figures in support of his opinion:

<i>Cases in which Formamint was not used.</i>		<i>Cases in which Formamint was used.</i>	
	No. of cases.	No. of cases.	Percentage occurrence.
Number examined	300	100	—
Cases in which otorrhœa occurred	60	7	7
" " rhinorrhœa occurred	68	10	10
" " cervical lymphadenitis occurred	34	8	8
Cases complicated by rheumatism	26	3	3

Young's paper requires perusal in the original to properly appreciate it.

MACLEOD YEARSLEY.

Adenoids and adenoid tuberculosis (*Amer. Journ. of Med. Sci.*, vol. CXXXIV, No. 2).—**Hamilton White** says that primary tuberculosis occurs in a certain proportion of all cases of adenoids. From the figures of other observers, and his own, this proportion seems to be about 5 per cent., and this is regarded as a conservative estimate. In determining the presence of adenoid tuberculosis the histological method is the most satisfactory. White does not consider tuberculosis to be an important factor in the production of adenoid hypertrophy, but adenoids and tonsils are the important channels of infection in tuberculosis of the cervical glands. In the development of pulmonary tuberculosis adenoids may sometimes be direct channels of infection, but their importance is probably more often indirect by predisposing to catarrhal inflammations of the upper respiratory tract.

MACLEOD YEARSLEY.

On the behaviour of the three resistances of the red blood-corpuscles in adenoid subjects (*Archiv Ital. di Otolgia, etc.*, November, 1907).—**Enrico Tormene**.—There is a preliminary note by way of contribution to the hæmatology and pathogenesis of adenoids. No very definite conclusions are drawn from the six cases observed. Tormene divides the red blood-corpuscles into three groups according to their resistance—maximum, medium, and minimal. In all his advanced cases there was increase of the maximum resistance, and this continued for not less than six weeks after the removal of the growths, when it gradually sank to normal. The other resistances were too variously affected for any conclusion to be drawn. The author suggests that, as in certain morbid states (*e.g.* icterus), a substance possessing a katatonic action is found in the blood, there may be in adenoid subjects a substance with hæmo-anatonic action which will affect certain groups of red corpuscles in an opposite sense to the action of the katatonic agents. In a future work Tormene hopes to definitely answer the following questions: Whence do the serums of these adenoids derive their increased potentiality? and Whence comes the anatonistic agent that acts on the corpuscles of maximum resistance?

MACLEOD YEARSLEY.

Rare case of primary acute latent diphtheria of the middle ear (*Annal. di Laringol.*, January, 1908).—**Cozzolino** records the very un-

common and remarkable case of primary diphtheria of the middle ear of a female child, aged $2\frac{1}{2}$ years, cured by repeated injections of antitoxin.

MACLEOD YEARSLEY.

Pneumococcal otitis media ('*West London Med. Journ.*,' April, 1908).—**Bowen** writes an important paper on this subject. He states that the most favourable source for investigation of the typical pneumococcus is the pus from the pleural cavity in cases of empyema. Films and cultures must be taken from the auditory meatus within the first week, when there is a steady flow of pus outwards; after it begins to become stagnant an infection takes place from outside. Over one hundred cases were investigated in the three stages of childhood: (1) Pre-adenoid stage, up to eighteen months old; (2) adenoid stage; (3) post-adenoid stage, over fourteen years of age. The pneumococcus is the pathogenic organism found in all cases of acute middle-ear suppuration. It may, in rare cases, infect the ear externally or through the blood-stream, but usually does so *via* the Eustachian tube. Bowen states that the pneumococcus is found in the saliva, the crypts of the tonsil, the nose and naso-pharynx in health; and it is generally some disturbing influence, such as a catarrh, or an operation for adenoids, or a submucous resection, which turns this simple organism into one of parasitic activity. Surgeons should, therefore, be most careful even in the simplest operations on the throat and nose to avoid shock, etc. Another explanation for otitis media in young children in the pre-adenoid stage is the habitual use of "comforters," which are often septic. The treatment for this form is to cleanse the mouth with glycerine and boric acid. The pneumococcus may limit its pyogenic action to the middle ear, or may attack the antrum and mastoid cells. The early diagnosis of this state is important, and such signs as a rise of temperature, profuse discharge, disturbed general condition, and pain or tenderness on pressure must be considered. The treatment is to open up the cells freely and to procure good drainage until the virulence of the organism has been exhausted.

MACLEOD YEARSLEY.

Delayed speech in children ('*Edinburgh Med. Journ.*,' 1907, p. 1506).—**Syme** points out that after the first six months the child murmurs unintelligible words. He begins to talk at one year, making himself well understood at eighteen months. Speech may be delayed until after two years; if after four years the prognosis is bad. In the first years adenoids influence speech by the deafness which they cause; if the child is mute at thirteen or fourteen years Guye's aprosexia or a cerebral cause must be considered.

MACLEOD YEARSLEY.

Acute suppuration of the middle ear; septic meningitis; cerebral abscess; radical operation; death ('*Journ. of Laryngology*,' November, 1907).—**Syme** records the case of a boy, aged 14 years, who had suffered from otorrhœa for one week in the left and for two days in the right ear. No symptoms suggested cerebral complication. Antiseptic treatment gave temporary amelioration, but a relapse was met by a radical operation. Extensive antral inflammation, with granulations extending from the attic, was found. The lateral sinus appeared healthy. A second operation was done three days later. Signs of thrombosis of the jugular appeared and death ensued three days after. Death appeared due to septic meningitis and necrosis. It would seem that lumbar puncture would have been useful both diagnostically and therapeutically.

MACLEOD YEARSLEY.

Untoward results from diphtheria antitoxin, with special reference to its relation to asthma (*The Therapeutic Gazette* [Detroit], March 15, 1909).—**H. F. Gillette** concludes that all sera are still in the experimental stage of their usage, and that no one should be used without a well-defined object in view and care as to the absence of contra-indications. A table is given of details of twenty-eight cases in which untoward results followed, and of which fifteen died. Symptoms come on usually within ten minutes of injection, and death, if it occurs, usually happens within one hour, and is due to respiratory failure. The author disclaims any alarmist intention.

MACLEOD YEARSLEY.

Otogenous intra-cranial complications in children; presentation of a case (*New Orleans Med. and Surg. Journ.*, January, 1909).—**Homer Dupuy** considers extension to intra-cranial structures from suppurations in the temporal bone from—(1) perforations through the tegmenta tympani et antri and the sulcus of the lateral sinus; (2) through natural channels, along the facial and auditory nerves, cochlea, and semi-circular canals; (3) through the blood- and lymph-vessels. He points out the vulnerable area of the petro-squamosal suture and the "safety-valve action" of the squamo-mastoid suture. The case is described of a male child, aged 5 years, with lateral sinus thrombosis and extra-dural abscess, who recovered after operation.

MACLEOD YEARSLEY.

An empyema of the antrum in a suckling (*Wien. klin. Rundschau*, April 4, 1909).—**Panzer** showed a suckling, aged 7 months, who had suffered from a swelling on the right side of the face extending from the brow to the chin; the eyelids were closed by the swelling, the conjunctivæ red and œdematous. The nose showed a swelling of the middle turbinate and a quantity of muco-purulent secretion. Puncture of the antrum through the nostril confirmed the diagnosis of this rare disease in infancy. In children this condition is usually very acute—high fever, extreme œdema and unbearable pain—but the prognosis is favourable.

M. D. EDER.

Surgery.

Treatment of umbilical hernia by means of paraffin wax (*Med. Press*, May 19, 1909).—**Burckhardt** states that when an umbilical hernia persists beyond the second year it is likely to become permanent. Treatment by strips of adhesive plaster frequently causes eczema, which, making the child cry, still further raises the intra-abdominal pressure. A pad with an elastic bandage is just as difficult to bear, and must be worn for a long time before the hernia is cured. By injections of paraffin, however, there is a possibility of closing the hernial aperture in the course of a few days. After disinfection of the part, the hernia is raised by two fingers of the left hand and the gut reduced by lateral compression. The right hand then introduces the needle, the tip of which is bent and has its opening on the side opposite to the flexure. It is introduced in such a way that the point is free in the hernial sac. Three to four cm. of paraffin at a temperature of 65° C. are introduced, the pressure of the left hand being at the same time gradually released, so that the hernia feels to be as full as it was before. The part is sprayed with ethyl chloride and the needle withdrawn, and a small gauze pad is strapped over the puncture. A circular plaster bandage kept on for

a week ensures success. There is thus formed within the sac a paraffin cap, which has solidified under the ether and is pressed by the bandage into the shape of a plate, thus completely preventing any further escape of the bowel. The irritation caused leads to inflammatory adhesion at the neck of the sac. On first attempts the mistake is often made of using too much paraffin. The limit to this method is that the neck of the sac must not be more than 1 cm. in diameter; when larger than this several injections will be necessary to form a pad sufficiently large to keep back the bowel, especially if there is diastasis of the linea alba. If any of the paraffin should escape into the abdominal cavity it solidifies quickly and does no harm. Only the so-called "hard" paraffin with a melting-point of 54° C. should be used, and it should be previously sterilised by being boiled in a closed vessel. The syringe and cannula must be kept in almost boiling water before use to prevent solidification before the wax can be injected. Soft paraffin, often mixed with vaseline, is dangerous on account of the liability to embolism and the tendency to be absorbed, when it acts as a foreign body.

T. R. WHIPHAM.

Idiopathic dilatation of the colon (Hirschsprung's disease) (*Surg. Gynec. and Obstet.*, vol. vi).—**Finney** reports the case of a child, aged 9 years, in which a successful result was obtained by first doing a colostomy above the dilatation, which began at the hepatic flexure; then later, when the child was much improved and the colon smaller, making an anastomosis between the ascending colon and the lower part of the sigmoid; and finally, some months afterwards, excising the whole of the dilated colon. The colostomy was left open as a safety-valve until the end, and was then closed. The author, in reviewing the subject, dwells in detail on the various theories put forward as to the causation of the condition. Such are—(1) distension accompanying an abnormally long mesentery, allowing of torsion of the sigmoid. In only a comparatively few cases has this been found to hold. (2) A congenital development as regards both the dilatation and the hypertrophy (Hirschsprung). (3) A colitis, which, becoming chronic, causes distension from abundant gas formation. Colitis, however, is described by most observers as a late manifestation. (4) An increased length of the colon with an exaggeration of its loops. (5) A mechanical obstruction, which many cases have failed to show. (6) A congenital aplasia of the muscular coats above the rectum causing a stagnation of the faecal contents, and followed later by a hypertrophy of the colon with the formation of fibrous tissue, due to toxic irritation. (7) A spastic contraction of the sphincter with fissures—a condition rarely seen. (8) A neuromuscular defect in one segment of the colon with paralysis, similar to phantom tumours. (9) A valve formation of the intestine. **Petrivsky** (*Langenbeck's Archiv*, Bd. LXXXVI, Heft 2) has made a necropsy on a case of true mega-colon, and came to the conclusion that the whole of the intestinal canal is involved and not merely the colon, both being much shorter than usual. The mesentery was histogenetically weak and lacking in elasticity with consequent dilatation and hypertrophy of the bowel wall. In a case of symptomatic mega-colon due to an abnormally long sigmoid these microscopical changes were not found. **Wagner** (*Surg. Gynec. and Obstet.*, vol. vi) reports a congenital case in a child, aged 2 years, in which there was marked peristalsis. In operating to excise the whole colon he found that the sigmoid was U-shaped and very large and terminated abruptly in a normal rectum, at which point there was a kink. The child died from embolism after thirty-two hours.

T. R. WHIPHAM.

Treatment of tubercular hip-disease (*Internat. Congress on Tuberculosis, September, 1908*).—Some radical changes in the treatment of hip-disease have been recently advocated. **H. A. Wilson**, who is a follower of Lorenz, states that nobody has a right to place a child with hip-disease in bed, for almost invariably its health will fail. He advocates weight-bearing with a short plaster-of-Paris spica to encourage what is called "Nature's cure." Patients are made to walk about without crutches, and activity is encouraged. Weight-bearing is stated to be conducive to the benefits obtained by an outdoor life, and to prevent circulatory stasis, thereby securing the benefits obtained by the hyperæmic method of Bier. It may be objected that pathological dislocation may be thus brought about, but the objection does not hold good, as this condition is the result of muscular action and occurs more often with other methods of treatment. In sixty patients under Wilson's observation the active treatment has produced good results, and the method is applicable both to early cases and to older ones with discharging sinuses. Sunlight, fresh air, and activity, combined with a milk and egg diet, are essential, and the limb is fixed in a position of 20° flexion, 20° abduction, and 50° external rotation. The child is then allowed to be up and about. **Ochsner** (*Illinois Med. Journ.*, July, 1908) advocates the use of tuberculin, controlled by the opsonic index, in the treatment of tuberculosis in bones and joints, and advises the injection of bismuth paste. Joints are fixed by means of plaster-of-Paris in a position of equilibrium. If treated by this means the writer is of opinion that the condition can be most satisfactorily and easily managed.

T. R. WHIPHAM.

Appendicitis in children (*'La Semana Medica,' January 7, 1909*).—**Morsaline**, describing the errors that may occur in the diagnosis of appendicitis, relates, among others, the case of a girl suffering from right ovaritis, occurring as a sequel to mumps. There were fever, constipation, vomiting, and extreme pain in the right iliac fossa; a swelling was found around McBurney's point. A surgeon confirmed the diagnosis of appendicitis, but operation was postponed. Iced compresses were ordered but the patient would not continue this treatment, but found most relief from hot applications. Forty-eight hours later the bowels acted, the temperature fell and the patient was better. *Per rectum* a small tumour was found in the right ovarian region. On further inquiry it was ascertained that she had had an attack of mumps a few days before the abdominal complaint occurred. The writer states that nearly all the text-books omit the differential diagnosis between appendicitis and an ovaritis of this nature in girls.

M. D. EDER.

Open safety-pin in the œsophagus of a child, aged 5 months (*'Lancet,' January 4, 1908*).—**Manson** reports a case of open safety-pin in the œsophagus of a child, the position of which was demonstrated by means of a skiagram, which showed the pin was lying with the point uppermost; as it seemed impossible to remove it, it was pushed down into the stomach. Milk diet was given and a dose of castor oil four days after admission. Six and a quarter days later the pin was found protruding from the anus. [This is the class of case in which Brunings' instruments for the direct examination of the trachea and œsophagus are of such great value, and in all probability the pin could have been removed by means of them without having recourse to the somewhat dangerous plan of relying on the alimentary canal to safely deal with the foreign body.]

GEORGE N. BIGGS.

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MIRROR WRITING.

By GEORGE A. AUDEN, M.A., M.D.(Cantab.), M.R.C.P.(London).

SPONTANEOUS retrograde or "mirror" writing is a phenomenon which is met with from time to time in children who are learning to write, and the chief interest of such cases lies in the psychological problems to which they give rise. The accompanying figure represents the writing of a girl, aged 10 years, who, from one cause or another, had received no school teaching whatever for over three years. When examined she was found to be able to name correctly the letters of the alphabet, but to be unable to read words of three letters. She could spell "cat,"* but not "dog" or "see." Her power of calculation for small numerals was of a normal character. On receiving a pencil she took it in her left hand and, without hesitation, wrote from right to left her name and the pseudonym "Baby." A fortnight after admission to school she was re-examined, and the results which were obtained with each hand are here depicted. She is quite unable to write to dictation,

* The word "cat" appears to be one of the easiest to memorise, and children with a considerable degree of mental deficiency are able to spell this word while unable to spell similar words such as "hat," "bat," etc. The combination of letters seems to form an easily memorised "graphic unity."

as will be seen in her attempt to write the words, "But there are lands far away over the sea," and the resulting letters point to a condition of paragraphia. Repeated examination revealed the interesting fact that the small addition and subtraction sums which she did were more frequently correct when she used her left hand than when she used her right hand.

What is the cause of this inversion of the normal process of

FIG. 1.

Janny Brookes
5 9 graham Street

Right hand.

DICTATION.

But the r lade for tay or
the se

Left hand

se
But the r lade for tay or
the se

writing? With practice it is quite easy to acquire facility in "mirror" writing, and a little reflection and introspection will show that this facility is dependent upon an incitation of the visual centre and upon its connection with the cheiro-kinaesthetic or writing centre, for it will be found necessary to recall the visual picture of the shape of each letter before it can be formed with the pen. The term "centre" is here used not in the physiological and local sense, but rather as a convenient expression of the con-

ception of the psychological processes which take place in connection with the apperception of language and its concomitant associations.

The existence of a separate cheiro-kinæsthetic centre for the art of writing has been denied by some (*e.g.* Déjerine), but there seems to be adequate clinical and psychological argument in its favour as a definite entity. To quote the words of Dr. Bastian: "Just as the re-excitation of Broca's region under stimulation from the auditory word-centre is necessary for speech, so a re-excitation of the centre in which the impressions generated by writing movements are registered is, under stimulation from the visual word-centre, needful for the production of writing movements" ('Aphasia,' p. 101).

It must be borne in mind that the act of writing is one of the most complex muscular acts which is required of the hand, and that it necessitates the complete co-ordination of a large number of muscles. It is not, therefore, surprising that prolonged training is necessary before the handwriting becomes "formed," so that the caligraphy of many persons never loses its juvenile character.

The act of writing never becomes as automatic as does that of reading or speaking; for instance, while it is quite easy to read to the bottom of a page without having a definite idea of the words read or of their meaning, or to speak without any conscious choice of words, this is not the case with writing. In writing the cheiro-kinæsthetic centre requires the conscious guidance and re-inforcement of one of the other centres of the memory-complex. This is also true for the so-called "automatic writing" such as that produced by Mrs. Verrall, for in this case the writing centre is the agent of the subliminal consciousness ('Proc. Psych. Res. Soc.,' pt. liii).

It must also be remembered that the memory impressions stored in the writing centre are memories of *movement*, not of perception as are those of the visual and auditory centres. That there are potential kinæsthetic centres for writing on each side of the brain, as would be expected *à priori* from the association of the centre with muscular movements, seems to be rendered probable by the fact that persons who have lost the use of their right hand learn to write with the left, although never with that ease and celerity which the right hand had acquired from early training.

An interesting case is related by Poore,* in which the patient, on account of severe writer's cramp, learnt to write with his left hand,

* Poore, 'Electricity in Medicine and Surgery,' p. 205; also 'Med.-Chir. Trans.,' vol. lxi.

but was quite unable to write with the left hand without performing at the same time unconscious movements of the fingers of his right hand. It seems that here the cheiro-kinæsthetic centre for the left hand required reinforcement by impulses from the life-long trained centre for the right hand before the letters could be formed.

Elder,* quoted by Bastian, makes a very interesting observation in connection with mirror-writing. He found that in a series of 451

FIG. 2.

Janny Brooke

$$\begin{array}{r}
 25 \\
 15 \\
 02 \\
 6 \\
 \hline
 16 \\
 422 \\
 \hline
 22 \\
 4
 \end{array}$$

$$\begin{array}{r}
 62 \\
 27 \\
 \hline
 35
 \end{array}
 \quad \text{Right hand.}$$

With a little help.

Left hand

$$\begin{array}{r}
 22 \\
 12 \\
 02 \\
 0 \\
 \hline
 14 \\
 \hline
 14
 \end{array}$$

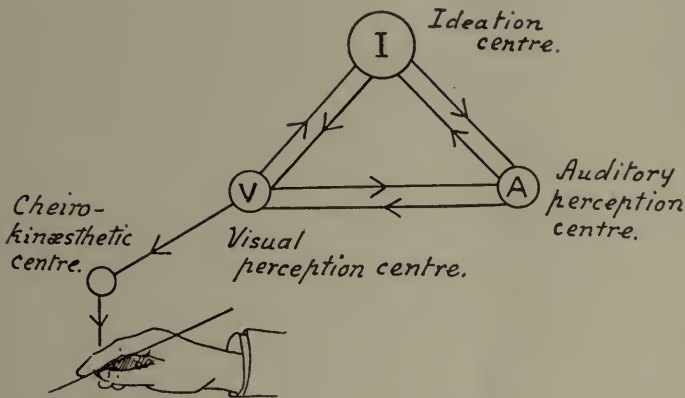
$$\begin{array}{r}
 22 \\
 12 \\
 \hline
 32
 \end{array}$$

persons asked to write with the left hand, 23 wrote mirrorwise. He adds in this connection that the mirror-writing thus obtained shows an individual character similar to that of the right-handed caligraphy of the writer. In the specimen, Fig. 1, although the writing is undeveloped, a rudimentary individuality can be seen in the formation of the letters, and it will be noticed that the writing of the left hand is more free and the letters better formed than

* 'Berlin. klin. Woch.,' 1878.

that of the right. The girl had doubtless been taught to write her name with her right hand when attending the infants' school—an accomplishment which for various reasons is always taught as soon as a child can form his letters. That her ideation centre was active is a necessary corollary of the fact that she associated her personality with her name and with the word "Baby," and knew the combination of letter-symbols which represented them. She cannot be thought to have had a revived mental picture in her visual centre of her name written mirrorwise. We are therefore led to regard the cheiro-kinæsthetic centre as that sphere of the memory-complex in which the impulse towards inversion has its origin, and the question arises as to whether the use of the left hand is the cause or the result of this inversion.

FIG. 3.



It is a well-known and easily demonstrable fact that it is difficult without constant practice to perform different movements with each hand simultaneously, and that when this is attempted the movements of the limbs become the counterparts of each other. Thus in the writing of a European language the right hand has been trained to move from the left to the right, but a similar movement of the left hand would be from right to left, as will be seen at once if an attempt is made to write with the left hand. It seems, therefore, a reasonable hypothesis to suppose that in mirror-writing when the pen is taken into the left hand and an attempt is made to write therewith, the muscular movements are the result of impulses from the motor centre which co-ordinates the movements of the left hand, but that these are reinforced and overlaid by a train of motor-memory impulses from the cells of the cheiro-kinæsthetic centre for

the right hand in which they have been accumulated during the process of learning to write.

This explanation may serve to explain the fact that mirror-writing is generally found in young children, and is in the majority of cases a transitory phenomenon which disappears as the right hand becomes more and more facile in the use of the pen.

It is difficult to make any definite statement as to the frequency of the occurrence of mirror writing, but it is not as rare as is generally supposed. On making inquiries at a deaf school two ambidextrous deaf-mutes were found who wrote mirror-wise when using the left hand. In each of three schools for mentally defective children a mirror writer was discovered. On the other hand, in a school for physically defective children, where there were several cases of paralysis involving the right hand, in every case the left hand writing was rectigrade, a fact which appears to support the explanation of mirror writing given above, for in these cases, as the right arm has been paralysed before any education has begun, the motor-memory centre associated with the right hand movements has not received any training and therefore remains functionless. The process of writing is thus carried out solely by the functioning centres for the left hand.

Ireland ('Brain,' vol. iv, p. 361) quotes several instances of mirror writing associated with mental defect, and describes an interesting case of a school-boy, aged 13 years, of good intelligence, who used his left hand in preference to his right, owing, in all probability, to some partial paralysis of the right side which was more apparent in the right leg than in the right arm. When ordered by his teacher to write with his right hand he secretly used his left, a subterfuge which resulted in a page of mirror writing which the boy appeared to imagine was an accurate reproduction of the "copy." The lad could read his own reproduction with ease. In the 'Proceedings of the Psychical Research Society' (pt. xlix, p. 402) is a description of a case of multiple personality in which, during the emergence of certain personalities denoted by Dr. Wilson as B₂ and B₉, the writing (of which plates are given) was of a childish character, and though written with the right hand with ease and with ordinary rapidity was from right to left, but was not mirror writing. In this personality she could not write to dictation but could copy. She had no power of associating objects with their names, and exhibited a reversal of colour naming, describing the colours by their complements, red as green for example, black as white, and *vice versâ*. In this state, which was associated with

a cataleptic condition, she appeared to be intellectually a child of three or four. B₉, in which she called herself "Wicked creature," was associated with destructiveness, and on one occasion she made an attempt to put her smaller sister on the fire. In B₆, however, as "Good creature," she wrote a well-formed hand in the normal way, had no motor paralyses, and was a docile and domesticated girl. On the other hand, the personality denoted as B₁₀ was that of an imbecile, paralysed, blind, deaf and dumb, yet the drawings which were executed during this state show that the ideation centre and the cheiro-kinæsthetic centre were even more active than before, for she was able to draw with considerable imagination and power of imagination, although the eyes appeared to be absolutely insensitive to light. It will be noticed that the characteristic attributes of the varying personalities which were associated with mirror writing in this case present a remarkable similarity to those moral characters or deficiencies which are frequently found associated with mental degeneracy. A discussion, however, of this case would lead us too far from the subject of mirror writing.

A NOTE UPON THE POSITION OF THE APEX-BEAT IN CHILDREN.

By JAMES E. H. SAWYER, M.A., M.D.Oxon., M.R.C.P.Lond.,
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 the Children's Hospital, Birmingham.*

THE following investigation was undertaken in order to ascertain more definitely the position of the apex-beat in children. It is generally recognised that the apex of the heart is not in the same position in children as it is in adults, and that at some time during childhood it gradually assumes the position found in adults. In order to make our knowledge more definite upon this point the position of the apex-beat was noted in 500 children, who were examined in the out-patient departments of the General and Children's Hospitals, Birmingham. They were examined consecutively, and the best developed children were not picked out for the observations, so the results that are here recorded have been ascertained in children of varying types of development. No cases are included in which any disease of the heart or lungs was found,

nor those suffering from any malady which could displace the position of the heart. The children were all examined in the erect position, for it is well known how easily the heart is displaced in young children by change in position. In some of the children, especially under two years of age, the apex-beat was found in the fourth left intercostal space; these were not many and have not been included.

This investigation chiefly deals with the position of the apex-beat in relation to the left mammary line in the fifth intercostal space, and the cases have been classified as—(1) those in which the apex-beat was outside the mammary line, (2) those in which it was in the mammary line, and (3) those in which it was internal to the mammary line. The last cases are those which are considered to represent the adult type with regard to the position of the apex-beat. A more detailed classification was attempted at first, but was soon found to be impracticable.

A few points became obvious when this investigation was commenced, and were confirmed as the examination proceeded. In children under two years of age the position of the apex-beat was often very difficult to ascertain. It often could not be felt, even when the child was quite quiet. In some cases in which it could be located when the child was quiet it was impossible to feel when the child cried, as so often happens when an infant is undressed for examination. The mammary line was determined by the position of the left nipple, and one could not but come to the conclusion that the position of the nipples is relatively further out in children under two years of age than in older children. If this be the case the apex-beat in children under two years of age is relatively further out than is indicated in the accompanying tables. It was decided, however, in spite of this observation, to take the nipple as indicating the point through which the mammary line should pass, and not to try to draw an imaginary vertical line from the middle of the clavicle, for this seemed more difficult to do than in adults. On account of these considerations the curve in Chart 1 is probably not quite accurate, for if the mid-clavicular line were taken in place of a vertical line passing through the left nipple, the percentage of cases with the apex-beat outside would certainly be higher in the first two years of life.

The following table gives the actual number of cases examined in each year, the sex of the children, and the position of the apex-beat.

*The Position of the Apex-Beat in the Fifth Left Intercostal Space
with regard to the Mammary Line.*

	Outside.			In			Inside.			All the cases examined.		
	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.
Under 1 year	10	6	16	4	5	9	1	0	1	15	11	26
1- 2 years	14	19	33	11	4	15	0	0	0	25	23	48
2- 3 "	11	6	17	13	12	25	0	0	0	24	18	42
3- 4 "	2	4	6	9	24	33	0	0	0	11	28	39
4- 5 "	5	4	9	18	12	30	0	1	1	23	17	40
5- 6 "	2	4	6	17	25	42	0	2	2	19	31	50
6- 7 "	1	4	5	14	20	34	4	3	7	19	27	46
7- 8 "	1	1	2	13	24	37	5	1	6	19	26	45
8- 9 "	1	2	3	6	15	21	5	3	8	12	20	32
9-10 "	0	0	0	10	14	24	10	5	15	20	19	39
10-11 "	0	2	2	2	10	12	6	8	14	8	20	28
11-12 "	1	3	4	6	5	11	6	3	9	13	11	24
12-13 "	0	0	0	4	2	6	4	3	7	8	5	13
13-14 "	0	1	1	3	4	7	4	4	8	7	9	16
14-15 "	0	0	0	2	2	4	7	1	8	9	3	12
	48	56	104	132	178	310	52	34	86	232	268	500

It will be noticed that there are not many cases recorded of children over twelve years of age. This is due to the fact that children are not admitted to the Children's Hospital over this age, and as the period over which the children were examined was the same at the two hospitals, it naturally follows that the number of the younger children is larger. The difference between the sexes with regard to the position of the apex-beat is only slight, but there is this one exception: Many more boys than girls were found to have the apex-beat within the mammary line, namely, 52 to 34, and this difference is more marked when it is noticed that thirty-six more girls were examined than boys. This seems to suggest that the apex-beat assumes the normal adult position earlier in life in boys than in girls.

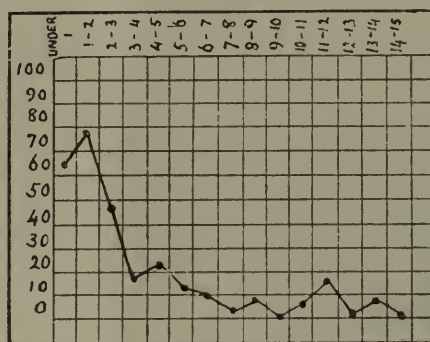
In order to ascertain what is the usual position of the apex-beat in each year of childhood the following charts have been constructed, in which is given the position of the apex-beat with regard to the percentage of the cases. Thus in the first year of life the apex-beat was found without the mammary line in 63 per cent., in the mammary line in 34 per cent., and within it in 3 per cent.

Chart 1 shows very definitely that the apex-beat is outside the

mammary line in between 60 and 70 per cent. of all the children examined in the first two years of life, and that up to the third year the apex-beat is in the same situation in half the cases. After the third year the number of cases with the apex-beat outside the mammary line suddenly becomes small, and gradually becomes less until at the ages of fourteen and fifteen years it was not found outside in any child whose chest could be considered normal. For the reasons pointed out earlier in this paper the cardiac apex is probably more often further out in the first two years of life than the curve in the chart would seem to indicate. If another method could be devised for determining the position of the apex the percentage of cases would certainly be higher during this period.

Chart 2 indicates that the apex-beat is commonly situated in the

CHART 1,



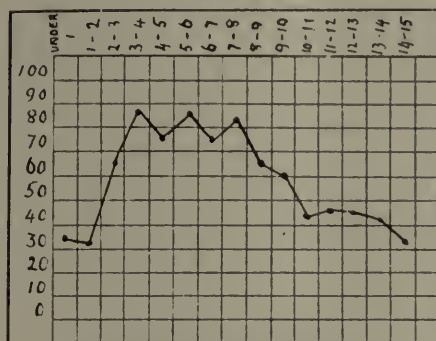
Apex-beat outside mammary line.

mammary line from the second to the end of the tenth year, and that after this age it gradually becomes less common in this position. Even between fourteen and fifteen years of age the apex-beat was in the mammary line in over 30 per cent. of all the cases examined. Between three and eight years the percentage of cases with the apex-beat situated in the mammary line was extremely high, namely about 80 per cent.

If all the children who were examined had been well developed, I feel sure that a larger number of them would have had the apex-beat within the mammary line at the age of fifteen years. The chests of many of the children between ten and fifteen years were poorly developed, and resembled more the infantile type, the antero-posterior diameter being relatively increased and therefore the chests narrower than is normal between these ages. In children with well-shaped

chests the apex-beat will be found not nearly so frequently in the mammary line after ten years of age as seems to be indicated in Charts 2 and 4, and these charts would probably be more correct if the line after ten years of age gradually fell to 0 at fifteen years.

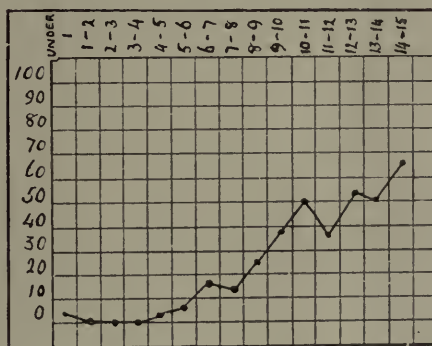
CHART 2.



Apex-beat in mammary line.

Chart 3 shows very clearly that it is extremely rare to find the apex-beat internal to the mammary line in the first six years of life, and that it is not until the tenth year that the apex-beat appears in this situation in half the cases.

CHART 3.

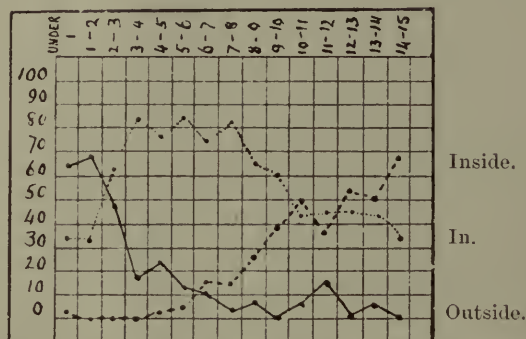


Apex-beat inside mammary line.

The conclusion that may be arrived at from this investigation is that the apex-beat is normally situated without the mammary line up to the third year, in the mammary line from the third to tenth year, and that after this age it gradually assumes the position found in the adult. Even at the age of fifteen years the apex-beat is

found in the mammary line in almost a third of the cases, but this large percentage is probably due to the bad development of the chest in many of the children.

CHART 4.



Combined chart showing percentage of cases with apex-beat inside, in, and outside the left mammary line.

That the apex-beat of children is situated further out than in adults is generally recognised, but it is not usually accepted that this outward position remains during such a long period of the child's life.

The Royal Society of Medicine.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

Friday, November the 26th, 1909.

Dr. J. PORTER PARKINSON *in the Chair.*

CASES.

Multiple Peripheral Neuritis in a Child, by Dr. A. E. GARROD. Girl, aged 8 years, healthy till March, 1909, when she had an attack of abdominal pain and passed a motion containing several ounces of blood. A similar attack occurred in May. In August the pain became constant. Loss of power in the upper and lower extremities developed in September. There was no history nor evidence of diphtheria, and examinations of the urine and hair for arsenic and of the urine for lead and hæmatoporphyrinuria were negative. The fundi were normal.

Dr. GARROD said he had not any idea as to what was the nature of the poison at work producing the peripheral neuritis; he refrained from suggesting such shadowy things as intestinal toxins, etc., which was apt to be invoked as a refuge of the destitute. He was prepared to hear some contend that the case should be ranked as anterior poliomyelitis rather than

one of peripheral neuritis, and he did not know that he could give any definite ground for excluding the former diagnosis. His diagnosis rested on having watched the case for several months and on the opinion of Dr. F. E. Batten, which he much valued.

Dr. G. A. SUTHERLAND regarded the case as one of very special interest, but he did not think members would be able to throw much additional light on the subject, for minute examination had been made. He thought time would throw much light on the question of anterior poliomyelitis. If it were that disease there would be an affection of certain muscles. Last year he had a somewhat similar case, in which a final diagnosis was never reached. The paralysis came on rather suddenly and the child was absolutely paralysed in extremities and trunk. The anterior abdominal muscles on the left side were paralysed and the breathing was done by the right side of the chest. The patient continued in that condition for a long time, but there was gradual recovery. Some weakness, however, was remaining in the left leg. There was also much wasting and the child had not been able to walk properly, and now there was some spinal curvature. In some of those cases it was practically impossible to tell during the illness what the lesion was, whether it was peripheral nerve trouble or a spinal lesion.

Dr. E. I. SPRIGGS rose, not because he could throw any light on Dr. Garrod's case, but to mention that two cases were shown at the last meeting of the Section which illustrated what Dr. Sutherland had just said. They were cases of anterior poliomyelitis affecting all four limbs. Already it was easy to distinguish a difference in the rate of improvement in different muscles.

Dr. GARROD replied that there had never been the slightest evidence of any discrimination with regard to particular groups of muscles, and that was one of the impressions which had led him to lean towards the diagnosis of peripheral neuritis.

Achondroplasia in a Twin, by Dr. R. HUTCHISON. One twin, a girl, aged $1\frac{1}{2}$ years, was a case of well-marked achondroplasia; the other twin, a boy, was healthy.

Cirrhosis of Liver, by Dr. R. HUTCHISON. Girl, aged 9 years; swelling of abdomen one year. No previous illness of importance. Two still-births preceded this child. Snuffles in infancy. Liver enlarged and irregular; spleen considerably enlarged; some ascites. Cirrhotic facies.

A Case of Unidactyly, by Dr. R. HUTCHISON. Boy, aged 13 weeks. One digit only on hands and feet, otherwise normal. First child of this generation. The father and his two brothers and one sister are similarly affected; so were his grandfather and his mother. A daughter of the father's sister exhibits this condition.

The CHAIRMAN, discussing the case of cirrhosis of the liver, said that one of the most interesting points which were mentioned by Dr. Hutchison was the curious way in which congenital syphilis, as well as other things, selected one organ, apparently, for its operations. He remembered one child which had disseminated choroiditis but no other evidence of syphilis, but the other children were typically syphilitic. He had seen a case of paroxysmal hæmoglobinuria with the same. Other diseases, of course, did the same thing, such as rickets and lead.

Dr. SHUTTLEWORTH said he thought the cases of twins, one of whom was normal and the other abnormal, were extremely interesting and somewhat

puzzling. He showed two photographs of twins, which Dr. Jeffreys Wood, of Melbourne, sent him, in which one twin had all the characteristics of Mongolism and the other was healthy. It was hard to say why, with the same mother but different ova, one twin child should be normal and the other twin should be affected, either with achondroplasia or with Mongolism as in the case pictured there.

Dr. EUSTACE SMITH remarked that one saw marked differences in twins even among children who were normal: one was vigorous and the other weakly. The question was whether that was not *ab initio*, from the stage of the ovum; the weakly child might always have had small resistance to toxins. The syphilitic poison was a matter which one might quote as having certain analogies. There were cases recorded of twins, one of whom had had from birth all the symptoms of inherited syphilis, whereas in the other up to a fairly good age there had been no sign of syphilitic infection. With syphilis one did not know what the later manifestations might be for a number of years. The case of unidactyly was to him truly remarkable, that there should be that defect, which one must consider was originally acquired, and transmitted in so many cases amongst three generations. It would be most interesting to bring the case under the notice of Professor Karl Pearson and others engaged in a statistical line of inquiry, because they gave a co-efficient of the probability of any defect being handed on; and he thought the present instance was in excess of any calculation which had been heard of in that direction.

Dr. CHARLES W. CHAPMAN, referring to the case of unidactyly, said that at the Clinical Society a case was brought forward of a father and baby with that deformity of claw-hand. The child had deficiency of the radius of one hand. There was a full description in the Clinical Society's 'Transactions' for 1900.

Dr. G. A. SUTHERLAND asked why Dr. Hutchison called Case 3 one of cirrhosis of the liver. Probably all would agree that the enlarged masses on the abdomen were specific; the spleen was also enlarged. The exhibitor said there was, or had been, some ascites, but he (Dr. Sutherland) could not find any at present. Also, What was the "cirrhotic facies"? He (Dr. Sutherland) regarded it as a case of multiple gummata of the liver, which were well known in connection with the late manifestations of hereditary syphilis. He believed that with care the child would recover.

Dr. A. E. GARROD said that in discussing such cases as the twins it was essential to draw a sharp line between true and false twins. One could not distinguish during life, except that they believed that twins who showed marked resemblance were true twins, *i.e.* came from one ovum. But in Dr. Hutchison's case they were false twins, *i.e.* from two ova; and it was not more remarkable that two such twins should differ than that two successive ordinary children should differ. But if one could find that achondroplasia occurred in a pair of one-ovum twins they could prove that achondroplasia was not strictly congenital, because one ovum would scarcely hold a normal and an abnormal one, but that it was an acquired characteristic *in utero*.

Dr. HUTCHISON replied that Dr. Garrod's point was a very important one. He had a photograph of twins, one of which was a cretin and the other quite normal, but there, again, they were false twins, and they were of different sexes. With regard to the case which he called "cirrhosis of the liver," he did not think one would get so much enlargement of the spleen in simple gummata of the liver. The spleen was nearly a hand's breadth below the

edge of the ribs. And when she came in there was an appreciable amount of ascites to be detected easily by the shifting dullness. He also attached considerable importance to the "cirrhotic facies," and was surprised Dr. Sutherland did not know what that was. He had always considered the facies a considerable help in diagnosis. The chief thing was the presence of spider-like telangiectases in the skin, and to some extent in the mucous membrane; and in grown-up persons there was a wasted and somewhat jaundiced appearance. The unidactyl cases were particularly interesting from a Mendelian point of view, and he hoped to have the matter worked up by Dr. Bulloch, of the London Hospital. The case mentioned by Dr. Chapman was a similar kind of deformity, also showing the hereditary tendency, but it did not affect so many generations as in his own cases.

Congenital Enlargement of One Limb occurring in Brother and Sister, by Mr. O. L. ADDISON. Boy, aged 9 years: Enlargement of right arm, shoulder, and hand; skin and subcutaneous tissues normal. Girl, aged 5 years: Enlargement of left leg; calf relatively much larger than thigh, and feels hotter than the rest of the limb.

Dr. PARKES WEBER said he regarded the cases as half cases of hemi-hypertrophy. He had a very good reason for classifying them in that way. It was that there were other kinds of congenital enlargement of one limb, also developmental, but only one kind of such which corresponded to half a case of hemi-hypertrophy. The characteristic of those cases was that the limb was always increased in length, whereas in other enlargements of limb, especially those called "trophædema," there was never any increased length of bones in the upper extremities. Another characteristic of the cases was that they were nearly always associated with angioma formation. In the boy now shown there was merely a little superficial telangiectasis. He believed that some of the enlargement of the leg was connected with enlarged veins, and possibly enlarged lymphatics. In the 'British Journal of Dermatology' for 1907 he published a paper on such cases, and collected records of every case he could find. He would now like to alter the title of such cases to "hypertrophy of one limb of the type of hemi-hypertrophy."

Mr. LOCKHART MUMMERY expressed his disagreement with Mr. Parkes Weber's contention, because in the cases which had been seen that day and in many of the cases of gigantism of one limb there was plenty of evidence that it was the blood supply or the lymphatic system which was at fault. The boy showed marked alteration in the peripheral blood-vessels of the thigh, and the girl had telangiectases in the back, and much thickening of the soft tissues. In the hypertrophy the whole half of the body shared, including head, limbs, chest, epiphyses of bones, and tongue; and it was not conceivable that that could be due to any condition of the blood-vessels. There was no system of the body which was anatomically bilateral except the nervous system. In hemi-hypertrophy the only possible explanation seemed to be that the nervous system was affected; and there must be some central lesion.

Dr. PARKES WEBER rejoined that in the paper he wrote he alluded to the abnormalities often found in the cases of hemi-hypertrophy connected with the blood-vessels; there was either some angioma formation, some telangiectasis, or something of the kind. Quite possibly those were due primarily to some nervous disorder, but that he did not regard as to the point. He believed that in one or two cases the brain on the opposite side was also hypertrophied, but that was not so in every case. Every degree

might be met with, affecting from one to four limbs, and affecting the face and the tongue.

Infantile Heart showing Nodules on Endocardium, by Dr. R. C. JEWESBURY. The specimen was from a case of broncho-pneumonia in a child, aged 4 months. During life the cardiac dulness was not increased, and the heart-sounds were normal. Post-mortem: Numerous wart-like bodies were present, especially on the mitral and aortic valves; there were a few also on the tricuspid and pulmonary valves and on the septum of the foramen ovale. Microscopically there was a delicate connective-tissue substratum supporting a layer of epithelium. There were no signs of old or recent inflammation.

The CHAIRMAN said that occasionally those who had seen post-mortem examinations on young infants saw light vegetations of that sort; but the present ones were larger than any he had seen, and more numerous.

Dr. E. I. SPRIGGS said he thought the lumps must be regarded as a hypertrophy of the little nodules which they were warned not to mistake for vegetations in infants. They looked like it, and that was what he thought when he saw the specimen shortly after the post-mortem. Dr. Jewesbury had had the specimens examined, and obviously there was no conclusion except the one which had been mentioned. He, Dr. Spriggs, thought they were hypertrophies of the small connective-tissue tumours covered with epithelium which were in the hearts of young infants. It was interesting that they occurred on the septum between the auricles as well as on the mitral and tricuspid valves.

Compression of the Trachea by an Enlarged Thymus, by Dr. GEORGE CARPENTER. The specimen was from a previously healthy male child, aged 10 months, who suddenly developed rapid and laboured respiration and died in less than twenty-four hours. Post mortem the thymus was found to extend in a solid mass from the thyroid gland to behind the manubrium, where it split into two lobes, the left and larger extending to the third costal cartilage, and the right to the second costal cartilage. The thyroid and parathyroids were also enlarged, but there was no general enlargement of the lymph-glands or lymph-follicles.

Dr. J. D. ROLLESTON, who showed the case for Dr. Carpenter, said the question of thymus death had for fifty years interested the medical profession. Many doubted the existence of a thymus death at all. Recently two remarkable papers had appeared, one in the 'Vierteljahrsschr. f. gericht. Med.' 1908, p. 88, by von Sury, of Vienna, who had had extensive experience of autopsies on children, and in 2341 autopsies of children up to 15 years at the Vienna Medico-Legal Institute he could not find a case where death could be attributed to thymus enlargement. He thought that in most cases death had been due to some other cause, such as enteritis or bronchitis. In the August number of the 'Archives of Pediatrics' Warthin criticised von Sury and believed many of the cases in literature justified the thymus death supposition. In favour of the mechanical cause of death was the fact that microscopical sections of the lung in this case had been examined by Prof. Keith at the Royal College of Surgeons, who reported that they showed an effusion of blood into the air-cells, thus giving evidence of suffocation.

Microscopical Section of the Liver of a Case of Icterus in an Infant, by Dr. GEORGE CARPENTER. The section was from a girl, aged 5 months, who died after an attack of catarrhal jaundice. At the time of death the jaundice had disappeared. Microscopically the liver capillaries were filled with red blood-corpuscles, and there was disintegration of cells

in the neighbourhood of a few clusters of leucocytes. The bile-ducts and Glisson's capsule were normal.

The CHAIRMAN said in regard to Dr. Carpenter's first case that a point against the mechanical view was, How did the child live ten months with such a condition? If it was mechanical pressure the thymus was probably bigger at one month, and the thorax was smaller, so that the pressure would be greater at the younger age. Was there any evidence of an acute enlargement just before death? There were many causes in young infants which would cause rapid death, for instance, various kinds of glottic spasm or acute suppurative catarrh, which left practically no trace in the lungs.

Dr. THURSFIELD said he had been for some years interested in those questions. In the present specimen he did not see any evidence of compression of the trachea. Nor did the present thymus look like one which would cause death. By thymus death he meant death occurring in cases of enlarged thymus with evidence of lymphatism; whereas here it seemed to have been used in the sense of death from mechanical compression. He thought the cause of death in the present case should be sought elsewhere. Were any cultures made from the heart's blood? Or did the lung, in the fresh state, show evidence of broncho-pneumonia? One case which would carry conviction as one of compression of the trachea was that published by Dr. H. D. Rolleston ten or fifteen years ago, in which the thymus was of enormous weight.

Dr. J. D. ROLLESTON* said he could not answer the Chairman's question; Dr. Carpenter and he were discussing it, and they could not satisfy themselves about it. He certainly thought the trachea was flattened. It was another point whether the flattening was due to the thymus. Von Sury said there were some cases of flattened trachea where the flattening was not due to an enlarged thymus. No cultures of the blood were taken. There was no evidence of broncho-pneumonia in the lung in the fresh state.

Congenital Malformation of Heart showing Complete Atresia of the Pulmonary Artery, by Dr. A. C. D. FIRTH and Dr. E. I. SPRIGGS. Child, aged 18 weeks. Cyanosis was persistent during life and was not improved by oxygen. Nothing abnormal in the heart was detected during life, except that the second sound was more audible at the right border of the sternum. The red corpuscles numbered 6,800,000. The muscular wall of the right ventricle was much thickened. Both ventricles communicated through a hole in the upper part of the interventricular septum. The pulmonary artery was represented by a thin-walled vessel terminating blindly at the base of the arterial trunk. The right auricle was much dilated, the left extremely small, and the foramen ovale was patent.

The CHAIRMAN said he had treated some cases of congenital heart disease with oxygen, but, as far as he could make out, with no benefit at all.

Dr. THURSFIELD asked whether Dr. Spriggs had ever seen cyanosis of any kind in an infant or adult relieved by oxygen.

Dr. SPRIGGS: Yes.

PAPER.

A Case of Strangulation of the Small Intestine by a Band in a Child, aged 15 months, by Mr. P. LOCKHART MUMMERY.

* The specimen was submitted to a further examination at the Royal College of Surgeons by Prof. Keith, and on opening the trachea it was found to be lined with false membrane. This was invisible from the larynx and did not extend into the bronchi. Although the stenosis of the trachea was not, therefore, the actual cause of death from suffocation, it in great measure conduced to it.—G. C.

Philadelphia Pediatric Society.

MEETING, November the 9th, 1909, J. CLAXTON GITTINGS, M.D., President.

SYMPOSIUM ON SCARLET FEVER.

(1) **Ætiology of Scarlet Fever.**—Dr. ALFRED HAND, jun., gave a brief historical sketch of scarlet fever, quoting a description of the disease from Smetius (1611), who, however, did not name it. Sydenham (1624-1689) being the first to differentiate it from measles and smallpox, and to name it *febris scarlatina*. Charts were exhibited giving some statistics for Philadelphia, one showing that the monthly number of cases bears a close relationship to the school-term, July, August, and September having about 100 cases each, while from October to June the number ranges from 200 to over 300 a month. Another chart showed that there is a lowering in the incidence of the disease during the last five years as compared with the four years preceding, but that there has been an increase in the mortality from 2.9 per cent. in 1905 to 5.2 per cent. in 1907. A third chart showed the annual fluctuations in the actual number of deaths since 1862; this also illustrating the variations in severity of different epidemics; the highest points were reached in 1870 and 1875 with 956 and 1032 deaths respectively, while 1872 had only 174 deaths in comparison; 1896 had 61 and 1897 had 282 deaths, the lowest number of all being reached in 1905 with 57 deaths.

While some investigators believe that a streptococcus is the exciting cause this belief is not yet generally accepted, and it is of great importance to have this point settled. When the specific cause is discovered beyond doubt it will clear up many strange features of the disease as to its modes of travel and, perhaps, as to the variations in susceptibility to it, and in the mortality in different epidemics; but it will be of the greatest help in diagnosing the mild and atypical cases.

(2) **The Municipal Control of Scarlet Fever.**—Dr. MAURICE OSTHEIMER read this paper explaining the regulations of the Philadelphia Board of Health in preventing the spread of scarlet fever. Post-cards are distributed on which the physician is required to report each case as soon as diagnosis is made. On receipt of this card a medical inspector is sent to the home of the patient to place placards on front and back entrances, and to see that the patient be properly isolated. No case of scarlet fever is allowed to remain on the first floor of the ordinary Philadelphia house. If not properly isolated, with trained nurse or other competent woman, who remains in the sick-room with the patient, the premises are placed under police quarantine, an officer being stationed front and back, allowing no one to enter or leave. No empty milk bottles are permitted to leave the house until disinfected. Wage-earners are allowed to move to homes in which there are no young children, after taking a carbolic bath and having their clothing disinfected. Children are excluded from school and Sunday school so long as the house remains placarded. The sanitary condition of the premises is inspected, and unvaccinated individuals are urged to submit to vaccination. All inmates of houses in which scarlet fever exists are prohibited from working in any establishment for the manufacture or sale of wearing apparel, upholstery, house-furnishings, bedding, cigars, cigarettes, or food-stuffs. The medical inspector notifies employers of scarlet fever occurring in the families of their

employees ; he excludes employees from work and permits their return after removal and disinfection. A sterilised gown is left at each house by the Board of Health for the attending physician to wear when visiting his patient.

The medical inspector also sends a post-card to the attending physician on the day he placards the premises, which the attending physician returns to the Board of Health when the case is ready for disinfection. On receipt of this card the medical inspector visits the house, sees the patient, and if satisfied that desquamation is over and that there is no discharge from nose or ears, he orders disinfection with removal of the placards on the next day, provided that at least twenty-one days have elapsed from the onset of the disease. He then sends school children back to school and notifies milkmen that milk bottles have been disinfected.

If isolation should be impossible at home, the patient is removed to the Municipal Hospital for Contagious Diseases. A telephone call will bring the ambulance at once. Disinfection of the premises follows one day after removal of the patient to the hospital, but school children are excluded for a week at least. The diagnosticians of the Board of Health are always ready to see any doubtful case and to make the diagnosis.

(3) **Difficulties in the Diagnosis of Scarlet Fever.**—Dr. JAY F. SCHAMBERG discussed various difficulties in the diagnosis of scarlet fever. He believed that more errors of diagnosis were made in connection with this disease than with any other acute infection. In formulating the diagnosis undue weight should not be given to any one symptom ; all of the associated phenomena should be carefully considered. Dr. Schamberg regarded the coincidence of a distinct angina and a well-pronounced scarlatinoid rash as not only warranting the diagnosis of scarlet fever, but, in view of our duty to the public health interests, this association compels us to regard and treat such cases as scarlet fever. He strongly counselled against the administration, to patients suffering from tonsillitis, of any drugs capable of producing a scarlatinoid erythema. Among these he particularly mentioned quinine, the salicylates, chloral, mercury, belladonna and veronal. Dr. Schamberg stated that in his opinion too much diagnostic importance was attached to desquamation. The orderly progression of the desquamation, its long persistence and certain special characteristics were considered of more weight. Many scarlatinoid erythemas due to drugs and various toxic conditions cause peeling of the skin, some of them even more pronounced than that observed in scarlet fever.

(4) **The Complications of Scarlet Fever.**—Dr. S. S. WOODY discussed as the complications of scarlet fever otitis and mastoiditis, nephritis, arthritis, ulcerative stomatitis, tonsillitis, adenitis, broncho-pneumonia, rhinorrhœa and relapses, giving many interesting details from his large service in the Municipal Hospital for contagious diseases.

(5) **The Treatment of Scarlet Fever.**—Dr. D. J. M. MILLER read this paper. He urged against over-treatment, saying that often the issue is unfavourably affected by it. He advocated a minimum amount of milk in the diet, because of its high protein content and its tendency to provoke digestive disorders. It should be diluted with and substituted by gruels and cereals, with vegetable soups and fruits. Animal broths he considered as objectionable as meat, but in prolonged cases, with loss of weight and

anæmia, he would not hesitate to give meat. The patient should remain in bed five or six weeks, even in the mildest cases. He believed that less nephritis occurred and the patients were more easily managed by this method. Daily sponging was advocated, but inunctions were postponed until desquamation occurred, because they interfered with the excretory action of the skin. He deprecated the use of carbolic acid, as poisoning has occurred from its use. Physicians who did not examine the urine daily failed in their duty. The use of drugs was entirely symptomatic; alcohol should be limited to septic cases; weak first heart-sound requires strychnia, camphor, caffeine; digitalis is questionable; anæmia needs iron hypodermatically; excessive temperature and temperature continuously above 103° F. is best controlled by hydrotherapy, bearing in mind the young child's susceptibility to cold. So, too, are restlessness and nervousness, combined with nerve sedatives. The throat should be cleansed daily with antiseptic washes, the nose with cotton swabs; because of danger to the ear douching and spraying were condemned. The ears should be examined daily; bulging of the tympanic membrane called for immediate incision.

Dr. MILLER also went over treatment of the many complications in detail, and concluded with the statement that the serum treatment was still *sub judice*.

Discussion.

Dr. W. M. WELCH said that the period of incubation of scarlet fever, while usually short, may be variable. He believes that in the majority of cases this period is four or five days; from three to seven days will cover most cases. The specific cause of the disease remains unknown. The susceptibility in individuals varies not infrequently. He cited the instance of a nurse who had been on duty in the scarlet fever wards for about three months and was considered immune, left the hospital, and was absent a year. On her return to duty in the scarlet fever ward she contracted the disease in a severe form. He stated that the disease is most frequent in young children, and is also most fatal among them. Many persons appear to be naturally immune. While as many as four fifths of the students who annually visit the Municipal Hospital for clinical instruction have never had scarlet fever, only one case has developed among them in the past ten years. The onset is sudden. Sore throat is the earliest symptom, and this is rarely absent. The rash makes its appearance in from six to twenty-four hours from the beginning of illness. It prefers the trunk and extremities; frequently it is absent on the face. But whether the face be involved or not it almost always presents an appearance that is peculiar—circumoral pallor with intensely red lips. The eruption is diffuse and punctiform; frequently miliary vesicles are seen on parts where the rash is intense. Stroking the skin of the trunk and extremities will cause pale lines to appear. These will rapidly disappear by return of the capillary circulation, but in a few moments the pale lines reappear and continue for some time. This is commonly called "secondary pallor." The appearance of the tongue is undoubtedly of much importance. At first it is covered with a creamy-white coating, while its edges and tip are of bright red colour and the papillæ very prominent. On the third day the coating will be seen to have disappeared to a great extent, and on the fourth day its disappearance is usually complete, leaving the upper surface of the tongue very red and the papillæ very prominent. We now have the strawberry tongue well marked. He regards the form of desquamation which begins at the free margins of the finger-

nails and strips backward, leaving the ends of the fingers of a pink colour, as most characteristic. Dr. Welch confesses that he is unable to say when a person who has recovered from scarlet fever is free from danger of spreading the disease. He has known such persons to communicate the contagion for as late a period as four months from the beginning of the illness, and long after all evidence of desquamation had disappeared. He is unable to state positively that the exfoliating particles of the epidermis are not infectious, but he firmly believes that the discharges from the nose, throat, and ears are infectious, and that they may continue so for a long time. In speaking of treatment, he favoured the use of chloral hydrate where there is delirium with insomnia and restlessness. In scarlatinal nephritis he highly recommends infusion of digitalis with acetate of potash. Should the urine continue scanty recourse should be had to copious sweating by means of the hot pack.

Dr. B. H. Potts said that a very considerable percentage of his patients give a direct scarlet fever history. This is true not only of suppurative cases but also of many patients who suffer from increasing deafness without history of any ear discharge, though there may have been discharge, with membrane rupture without the patient's knowledge, the scars on the membrane giving indisputable evidence of the process. Otitis media is the most common and the most dangerous complication of scarlet fever, on account of the possibility of grave septic conditions resulting. Function is nearly always impaired and frequently destroyed. The streptococcus is the micro-organism most frequently present in discharges from the ear. Dr. Potts divides cases of scarlatinal otitis into three classes occurring at different stages of the general infection. The first is acute serous inflammation developing before the eruption, mild in form, with few symptoms and a serous discharge, which may later become infected. The second class, acute suppurative otitis, generally begins about the second week of the illness, with a rise in temperature, pain and adenitis. The third class is the neurotic type, very severe in character. Dr. Potts believes that infection occurs sometimes through the Eustachian tube and sometimes through the blood and lymphatics. Prognosis should be guarded. Patients with enlarged tonsils and adenoids are apt to suffer severely and to have continued discharge. Treatment is surgical and antiseptic. There is unquestionably a contagious element in the discharge of a scarlatinal otitis, and great care should be exercised in the antiseptic cleansing of the ear. The discharge should be considered a factor in quarantine. Early recognition and prompt treatment of ear complications will certainly save your patient trouble and distress and may save a life.

Dr. E. E. GRAHAM said that scarlet fever is not very contagious during the first twenty-four hours. This is proven by the fact that children isolated promptly at the end of the first twenty-four hours very often do not contract the disease. This is probably due to the fact that contagion is not spread by the breath, and during the first twenty-four hours there is not so much membrane and discharge from the various mucous membranes. There is, of course, no desquamation, and there is probably little if any infection of urine, fæces or perspiration; or if there is such infection, it is probably less than later in the disease. Too much stress cannot be laid on the importance of isolating cases of scarlet fever as long as there is any purulent otitis, rhinitis, pharyngitis, or suppuration of the glands. All children before admission to a hospital should be carefully examined to ascertain if any such condition, should it be found, might not be a sequel to

scarlet fever. The discharge of post-scarlatinal empyema is also positively capable of transmitting the disease. A scarlatiniform rash alone is not scarlet fever, for digestive disturbances in infants not uncommonly produce an erythema closely simulating scarlet fever, as also may result from antipyrin, quinine and belladonna. Sore throat with rash should always suggest scarlet fever. The temperature chart is important in diagnosing complications. Dr. Graham advanced several arguments against the streptococcus being the cause of scarlet fever. He also advocates nasal douching in the treatment of scarlet fever.

Dr. F. C. KNOWLES emphasised the resemblance between certain drug eruptions and scarlet fever, particularly in regard to quinine. Several cases of this character had been observed. Two years ago he saw a patient in Dr. Davis's service at the Pennsylvania Hospital, in whom several days elapsed before the diagnosis of quinine dermatitis could be made positively. Recently a patient under treatment for exfoliation of the palms of the hands and fingers, resembling markedly that found in scarlet fever, was found to be due to packing quinine pills in boxes and bottles. Several cases of exfoliation of the hands associated with sweating have been observed of the type mentioned by Dr. Schamberg in his paper, and previously reported by him in the 'Journal of the American Medical Association.'

Dr. J. T. RUGH spoke of the joint manifestations of scarlet fever. They may result from the toxins elaborated or from the direct infection of the joint with the streptococcus. Surgical intervention should be used very early in those cases due to direct infection to save the joint function if possible and often to save life, as these inflammations are extremely violent.

Dr. MILLER remarked that nothing had been said in reference to the duration of quarantine in cases with the enanthem alone, as Forelheimer calls those occasional cases with throat and general symptoms but without eruption. Dr. Miller thought such cases should be isolated until the possibility of desquamation had passed two or three weeks.

Dr. SCHAMBERG added that there was no positive evidence of the infectiousness of desquamating epithelium in scarlet fever, and there was considerable negative evidence against the view generally held. The majority of physicians of large experience no longer hold to the traditional view on this subject. Despite this, the establishing of the cessation of desquamation as the minimum boundary of the isolation period was not a bad working rule. The real lurking places of the germs are doubtless the nose, throat and ears.

Reports of Societies

MIDLAND MEDICAL SOCIETY.

November the 17th, 1909.

Mr. FRANK MARSH, *President, in the Chair.*

A Case of Congenital Malformation of the Nails of the Fingers and Toes.—Mr. BILLINGTON showed a girl, aged 3 years, who suffered from a peculiar form of keratosis, which was first noticed at the age of 3 months.

She was the sixth of a family of seven, the rest being normal. The fingers and toes were perfectly natural and showed no trophic changes, but each nail of the fingers and toes looked like the claw of a dog. A horny mass like a spur black in colour, and very hard, arose from the whole of the surface usually occupied by the nail, and curved over the end of the digit, projecting some distance. The child had been brought to the Queen's Hospital in order to have the nails cut.

A Case of Cirrhosis of the Liver.—Dr. EMANUEL showed a girl, aged 4 years, who had an enlarged cirrhotic liver and spleen and a slight amount of secondary anæmia. There was no ascites. The condition was first noticed three and a half months ago, when the child came under observation for an attack of catarrhal jaundice lasting about fourteen days. Under anti-syphilitic treatment the liver and spleen had not diminished in size, and there were no other signs of syphilis present. The question of the condition being due to alcohol was also discussed; there was reason to believe that the child had been allowed to take small quantities of beer, although it was impossible to compute how often this had occurred.

A Case of Syringomyelia.—Dr. KAUFFMANN showed a girl, aged 15 years, suffering from syringomyelia of seven years' standing. The right pupil and palpebral fissure were smaller than on the left side, and there was very marked kyphosis of the cervico-dorsal region, coupled with scoliosis below. No trophic joint lesion was present, but there was a great tendency to almost painless sores on the right arm and leg and on the right buttock. The onset and progress had been gradual, and there had been no pain at any time.

A Case presenting many Rheumatic Nodules.—Dr. SAWYER showed a boy, aged 18 years, who presented numerous rheumatic nodules. The boy was suffering from chorea, which he had had on many occasions since the age of six years, and in March, 1909, he had an attack of acute rheumatism, during which endocarditis of the mitral valve developed. The rheumatic nodules made their appearance two months later. The largest were on the backs of the hands, and were about the size of an almond. There were a few small ones on the fingers, and rows of shot-like nodules along the tendons on the anterior surface of each wrist. Nodules were also present on the elbows, knees, dorsum of the feet, ankles, and over the right parietal bone. None of them were tender, and they varied considerably in size from day to day, usually being larger in the evening, when there was a slight rise in the patient's temperature. The chief points to be noticed were: (1) The unusually large number of the nodules, (2) the long time they had existed, and (3) their presence in so old a patient.

A Case of Intra-thoracic Obstruction in a Child aged 4 years.—Dr. DOUGLAS STANLEY showed a boy who had had signs of intra-thoracic pressure of nine months' duration. There was a large amount of cedema of the face and eyes, engorgement of the superficial veins of the neck, thorax, and abdomen, in which the blood-flow was from above downwards. On percussion of the chest there was absolute dullness all over the sternum, and this extended about two inches each side of the sternum. The liver reached upwards to the fifth rib in the right mammary line, and extended about a finger's breadth below the costal margin. There were signs of consolidated

lung at the right apex. There was also a spasmodic cough. At first the cause of these symptoms was thought to be a sarcoma of the thymus, but there had been such marked improvement in the course of some weeks that this diagnosis was no longer probable. Possibly the condition was due to tuberculous glands.

Review of Book.

A GUIDE TO THE FEEDING OF THE INFANT DURING THE FIRST YEAR. By J. W. SIMPSON, M.D., F.R.C.P. Edin., Assistant Physician, Sick Children's Hospital, Edinburgh. Price 2s. net. Edinburgh: James Thin. London: Simpkin, Marshall, & Co., 1908.

THIS little book of 80 pages is devoted to the feeding of the infant during the first year of life, and to some of the disorders which arise as the result of improper feeding. It is divided into two parts, and inserted between them is a short and useful chapter on the proper way to wean the infant. Part I, which deals with breast feeding, is written in a clear and concise manner, and is perhaps the best portion of the book. The author points out clearly the necessity for regular feeding, the length of time the infant should be allowed at the breast, and the common causes which tend to upset the child's digestion. The composition of breast milk is included and the evidences and causes of unsatisfactory breast-feeding discussed. The treatment of weakly and premature children, the diet of the nursing mother, the care of the nipples, and the contra-indications to maternal nursing are also described.

Part II deals with artificial feeding, and is clearly written. After comparing the composition of human and cow's milk, the most satisfactory manner of artificial feeding from the time of birth is shown, and the various mixtures which may be given to the child are described, with the indications for their use. The more common causes of gastro-intestinal disturbances in infancy, such as vomiting, colic, constipation and diarrhoea, are given, and their treatment, both preventive and curative, clearly outlined. In some of the tables on artificial feeding the names of certain well-known patent foods appear. Patent foods are not necessary for a healthy child, and certain of these foods should not be picked out for advertisement in a medical book while others which are quite as good are omitted. It would perhaps have been better not to have mentioned at all any patent food, and we are surprised that the author should have done so, for he states earlier in this work, "It is the unanimous opinion of the doctors who have devoted most time and work to this special subject, that patent foods are, generally speaking, injurious to the infant, and that they should be used only after the most careful consideration, and always on medical advice."

Each part of the book is divided up under certain headings, which facilitates reference to any particular point. This book should certainly be useful to the younger practitioners of medicine, and to medical students, and should serve as a valuable guide to mothers of average intelligence, for it has been written in a popular manner and is therefore easy for them to understand. We can thoroughly recommend this book as a reliable guide to infant feeding during the first year of life.

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